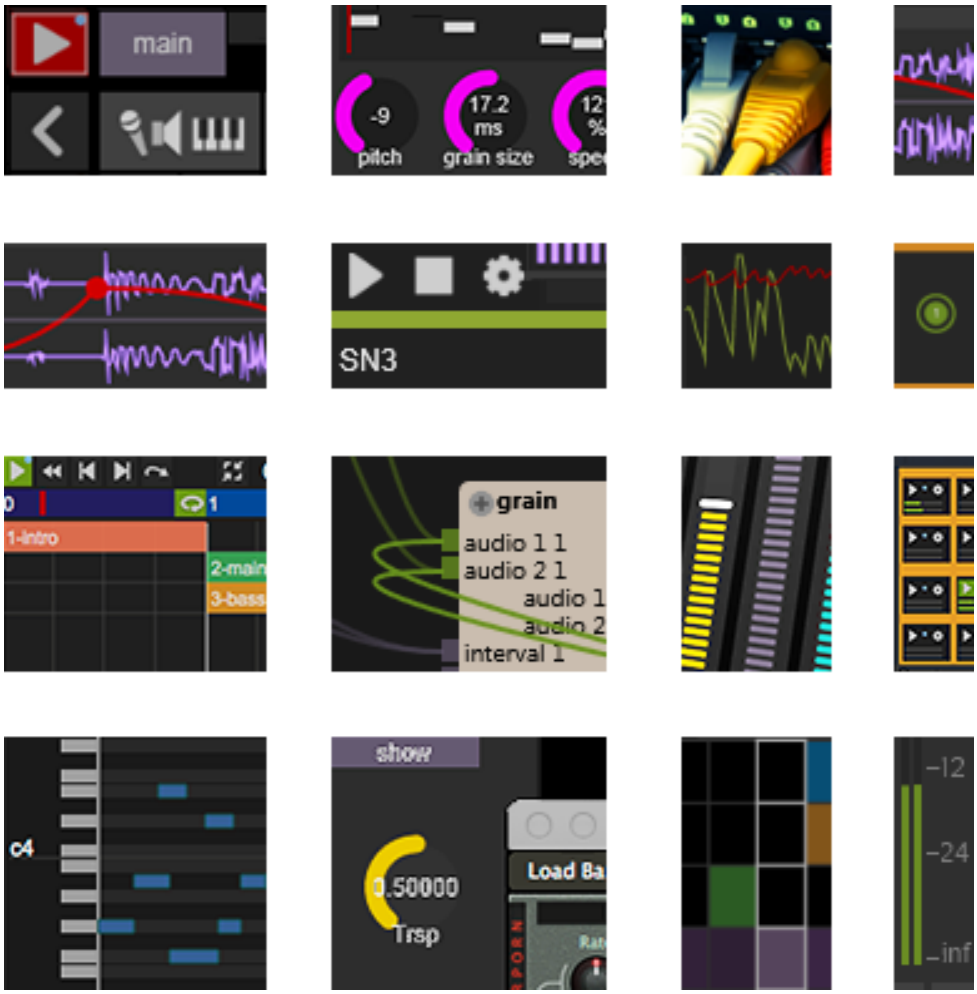

u2ine Hollyhock

User Manual v2.0b

By **Yan Le Déan** and **Shane Hull**

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1. Introduction

Welcome to the Usine Hollyhock User's Manual.

Usine Hollyhock is a unique piece of software which introduces several revolutionary concepts that you will discover how to use along with this manual. Even if you are fluent with older Usine versions it is highly recommended to read through carefully.

The first thing to understand is that Usine is dedicated to live music and real-time installations. It's not a traditional Digital Audio Workstation, so it has a very specific approach. Moreover it is a modular environment, which means that even if you can find many ready-to-use examples, the main goal is to create and customize your live set to fit it exactly to your needs.

Olivier Sens & **the Sensomusic Team**

Hollyhock is still in evolution, so some colors and details are subject to change depending on the version being used.

Conventions Used in this Manual

This manual provides indicators to help guide the user when performing procedures and when pointing out important key concepts, terms, or actions.

Indicates an Action such as a Double-Click, or to Drag-and-Drop.

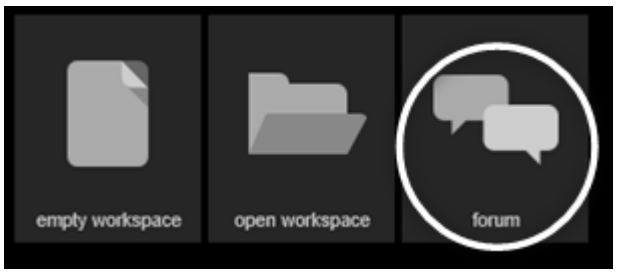
Indicates a key-term or concept such as a **Patch**, **Rack**, or **Workspace.**

Italics indicates a dialogue or location path to navigate such as *Library/Audio FX.*

`INDICATES KEYBOARD SHORTCUTS SUCH AS [CTRL/CMD +S]`

Icons such as the gear to the left help guide the user to locate the similar icon available on the Usine Interface. Generally this prompts an action to interact with the icon, and/or provide a description of the related function.

Illustrations/Screenshots such as the one below generally indicate an action related to the procedure has taken place, and is used to help guide the user to perform the same or similar action.



This indicates a related note, or sub-topic that is being discussed; or to provide some extended or advanced description.

2. Installation

Usine is a "portable application". This means that there are no installer applications or set locations that it must be installed to. Just unzip the downloaded file into your defined location and play. Several versions of Usine can be installed on the same computer. A common usage example would be to have several installations, one for each custom performance setup.

Windows: Unzip the downloaded file and execute Usine.exe

Mac OSX: Unzip the downloaded *file (avoid third-party software, use the default Mac unzip utility)* and Double-Click on the extracted file (application package*).

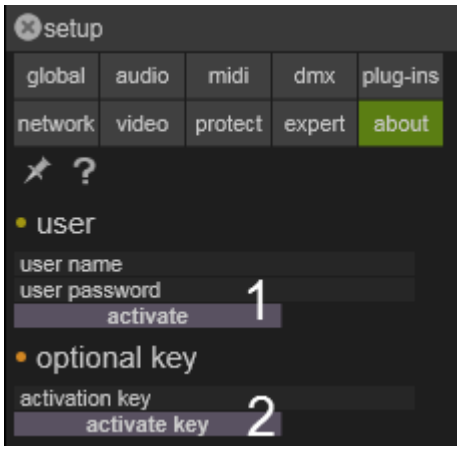
*Some MAC users report this type of messages: *"Usine.app can't be opened because it is from an unidentified developer"*

Don't worry, this came from Gatekeeper, not Usine. Gatekeeper is a new feature since OS X Mountain Lion, here how to solve this:

1. In Finder, control+click or use a Right-Click on the icon of the app.
2. Select Open from the top of **contextual menu** that appears.
3. Select Open in the dialog box. If prompted, enter your administrator name and password.

Activate Your Copy

In order to activate Usine Hollyhock you must have an active connection to the Internet. To prevent connection issues you might need to disable anti-virus and firewall software temporarily while activating. This activation only needs to be performed once, then Usine is able to function without an active internet connection.



There are two ways to activate:

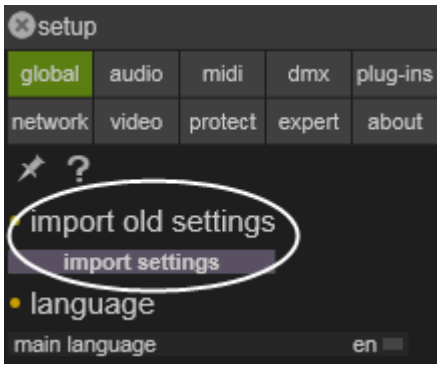
Click this icon on the **main icon menu bar** to open the **setup panel.** Select the about tab.

1. If you are correctly registered in the forum, simply enter your forum user name and password *(Don't forget to press the Enter key after each one),* then Click the *activate* **button**.

2. Alternatively if you have received an activation key, enter this activation key and Click the *activation key* **button**.

Update from a Previous Version

To update your settings from a previous version, open the **Setup panel** Global tab and Click on **import settings**, choose the path to the previous version location folder (PC) or the precedent .app file (Mac). When asked, restart Usine.



We send only a few newsletters, generally for major updates or promotions, but you can also subscribe to the RSS feed of the news forum to receive all updates news.

Use this link in your Rss reader:

http://www.sensomusic.org/forums/rss.php?cid=4

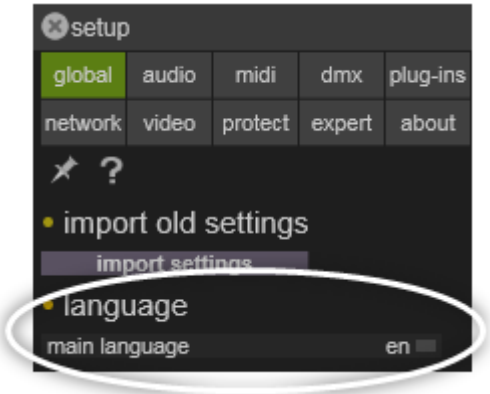
Language

When you run Usine Hollyhock for the first time you will be prompted for either English or the French language. Once selected, this will remain your default.

You can also select the main language to use in the **setup panel.**

Click on the setup icon to open the **setup panel**, and then select the global tab.

English and French languages are provided within the **combo box.**

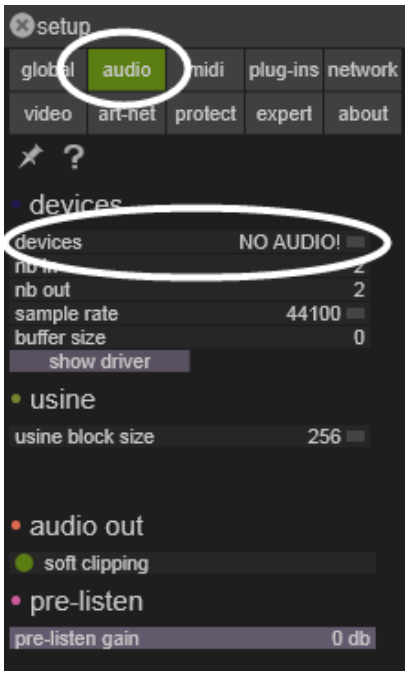


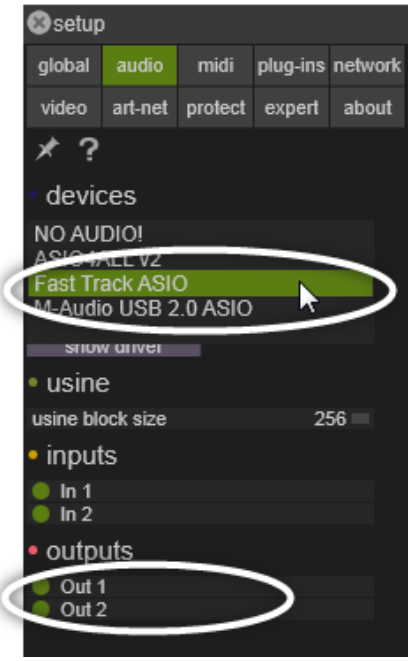
3. Hardware Device Configuration

Select an Audio Sound Card

Select this icon to access the **setup panel.**

Once the **setup panel** is opened, you can also configure your Audio Sound Card. Select the audio tab and choose your soundcard in the **devices** combo box. Once your device is enabled, the corresponding inputs and outputs will be shown. To enable the inputs and outputs, click the enable-radio button next to each one that is to be used to turn it green.

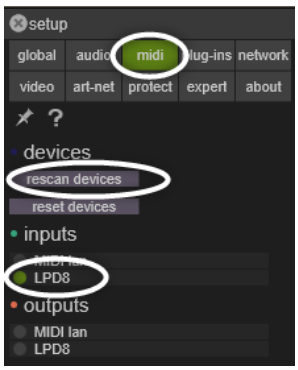




Activate MIDI Devices

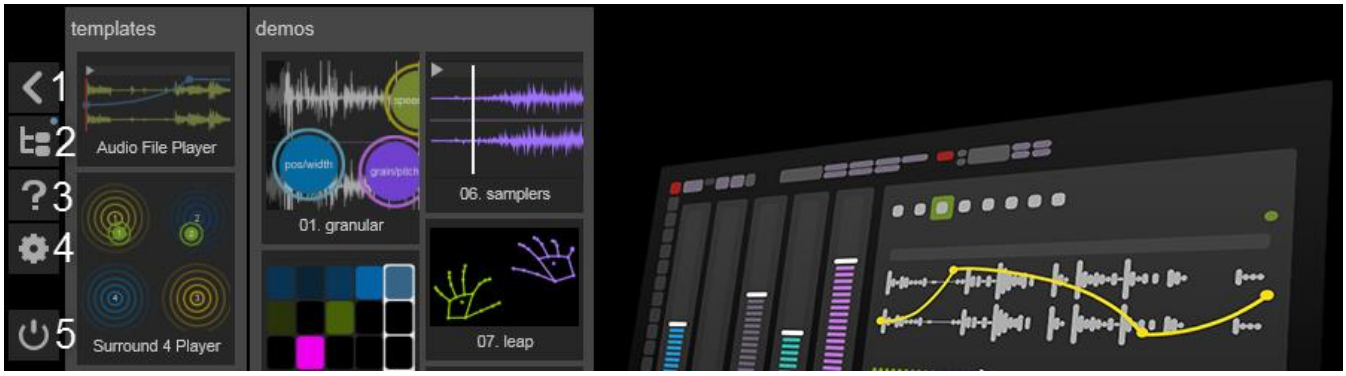
The next step is to activate any MIDI hardware that you want to use within Usine.

Select the MIDI tab to display the available MIDI devices. If the devices were just recently connected and/or they are not shown in the list press the rescan devices button. In some cases the hardware driver might need a full-reset; in this situation a soft-reset can be done by pressing the reset devices button. Again to enable the inputs and outputs, Click the enable-radio button next to each one that is to be used to turn it green.



Here the Akai LPD8 MIDI controller is activated:

4. Start page



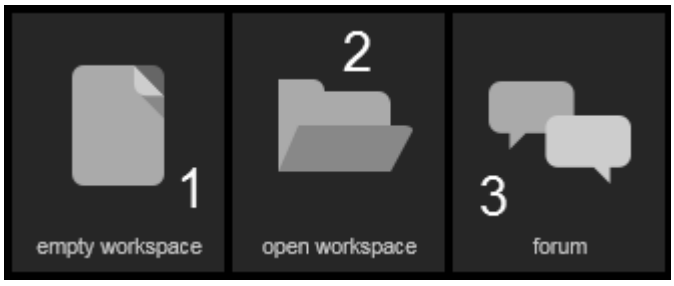
The Start Page is the first page you see when you open Usine.

Menu Icons

1. **Navigation:** You can navigate between your **workspaces** and this start page at any moment with this icon.
2. **Browser:** Opens the Usine **browser** to open a **workspace** directly from the factory library or from your personal folders,
3. **Help:** Opens a web **browser** to display a help page about this start page,
4. **Setup:** Opens the **setup panel** for the main configuration (Audio/MIDI and more)
5. **Quit** Usine,

Quick Access Buttons

The Quick-Access Buttons provide a simple and efficient way to start your workspace and access the forum.



1. Click **to create** a new empty **workspace** and switch to the **workspace** view.
2. Click **to open** a previously saved **workspace**,
3. Click **to open** your web **browser** to visit our discussion forum.

Templates

This column contains **workspace** templates. There are a few templates which are initially available such as the *Audio file player* and *surround examples*. You can easily create your own templates by saving your workspace to the Usine directory: *Usine / Resources / Templates / Default / Workspaces*

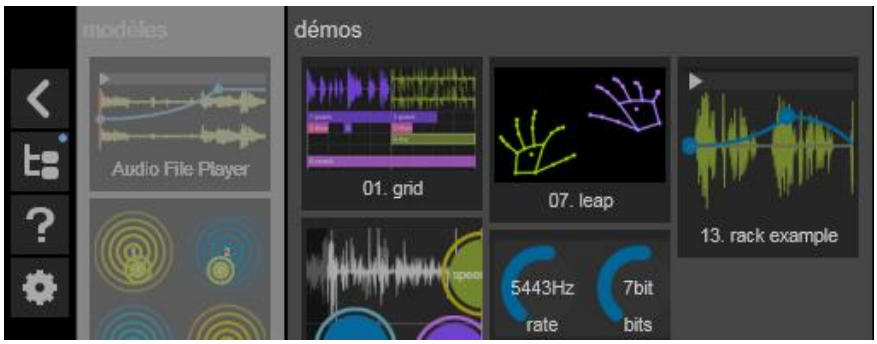
Recent

This column will not be present on the first-launch of Usine, however it will display the most recent **workspace** saved when you return to Usine.

The trash-bin provides the ability to delete all entries from the Recents column.

Demos

This column contains demo **workspaces** available to inspire and help you explore Usine's endless-possibilities. Simply click on any of the pictures to explore these ready-made examples.

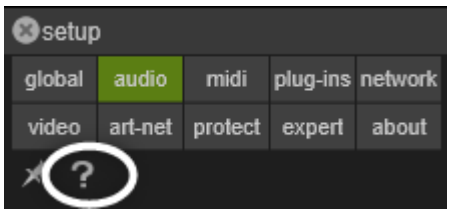


5. How to Find Help

If ever in need of assistance, there are many methods to obtain help, inspiration, and direction when exploring Usine Hollyhock. This section provides several key items to look out for when in need of help.

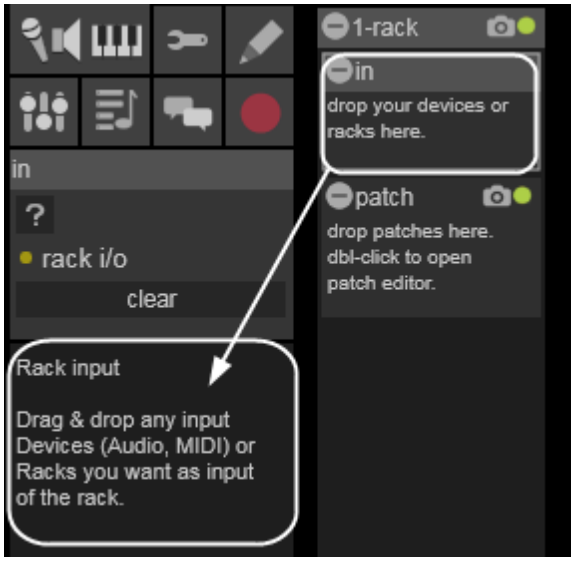
The Help Icon

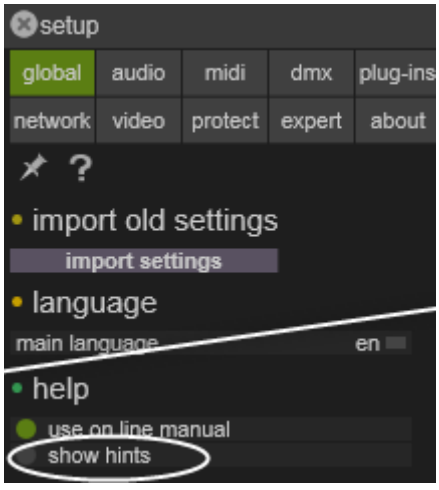
All objects within Usine have their own small help icon that can be accessed in the **settings panel** or the **contextual menu.** This will open a wiki page in your web browser.



The Hints Panel

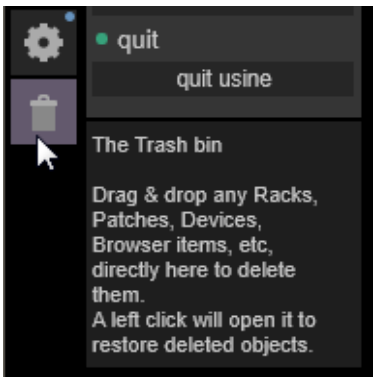
The integrated **hints panel**, if activated in the global setup can also provide a first quick help when the mouse is over an object. Here you can see the **hint panel** for the trash bin:





The Hints Panel can be enabled or disabled in the global setup tab.

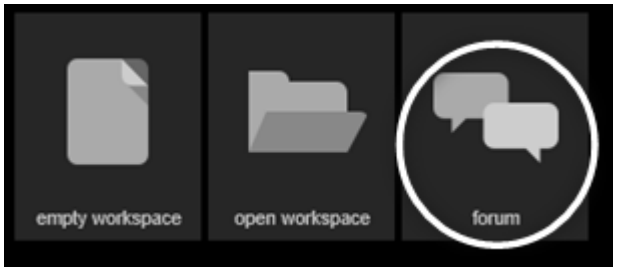
The **hint panel** is a contextual panel that displays a short help text about the selected object. Above you can see an example with the **rack** input selected, or an example of the trash bin to the right.


quit
quit usine
The Trash bin
Drag & drop any Racks, Patches, Devices, Browser items, etc, directly here to delete them.
A left click will open it to restore deleted objects.

The Forum

Of course our forum is a good place to ask all questions and share experiences with the user's community.

This one is directly accessible from the **start page** with this icon:



You can also find more information in the online manual. The online manual contains the help pages you can access directly from Usine, but also includes some general pages with more details about the concepts.

contact@sensomusic.com (Preferably for issues related to the License, the access to the forums, workshops, etc.).

6. What is a Workspace?

A **Workspace** refers to the overall environment, in other words the main window where you organize your work. In your **Workspace** you decide which panels are visible, which sounds to add, effects to use, and automation to tie it all together. Within the **Workspace** there are two other important items that will be shown and demonstrated: **Racks** and **Patches.**

To summarize: A **Workspace** is the overall environment that contains **Racks** and **Patches.**

In the **Start Page** select the icon shown below to open your first **workspace** named *13 Rack example.*

This is an example of a common **Workspace**:

7. Usine Hollyhock Interface

1 **Main Icon Menu Bar:** This icon menu is used to display several panels including the **Browser**, and also to activate features like the MIDI /OSC learn mode, the automation recording, and more.

2 **Master Panel:** This panel contains the main ON/OFF switch (audio and calculation engine), the main volume fader/meter, and several useful indicators.

3 **Synchronization Panel:** This panel is where you can set your tempo for MIDI sequencers, piano roll, the grid, and all quantized objects in Usine and SMPTE parameters.

4 **Panel Menu:** The icons displayed within this menu give access to panels such as the mixer, direct to disk, and Devices panel, which displays your audio and MIDI activated devices.

5 **Contextual Menu:** This menu will be different depending of the selected object and will display several commands (open, save, and delete for example) specific to the selected object.

6 **Rack: Racks** are where you create your Audio, MIDI, DMX, and Video chains. You add inputs (external or internal), add sounds, FX's, and automation curves and finally your Audio/MIDI outputs.

7 **Rack Input:** Input zone of the **Rack**, for example a microphone, or a MIDI device.

8 **Rack Output:** Output zone of the **Rack**, generally your sound card output, or a MIDI device.

9 **Patch:** A multi-function set. For example produce or process sound, send DMX commands, and everything you can imagine.

10 **Automation Curve:** Example of an automation curve you can create and edit for all visible elements.

11 **Hints Panel:** This panel is a contextual panel, displaying a short help text about the selected object.

12 **Colors Palette:** A quick way to change the color of an object.

8. Advanced Description of the Interface

The Main Icon Menu Bar

The Main Icon Menu Bar is located on the left-hand side of the **workspace** and provides key-elements in the design, navigation, and control of your **workspace** performance.

Start page: Navigates between your **Workspace** and the **Start Page**.

Browser: Opens the **Browser** window to display any recognized type of files, in order to load them.

Grid: Displays the grid window, the main Usine sequencer.

IB: Switches to the IB (Interface Builder) window to display your personal interface

Show/hide menu: Displays/Hides the **Contextual Menu** and the help panel.

Settings panel: Displays the **Setting Panel** to edit main, design, remote properties, of the selected object.

Synthetic view: Gives an overview of your **racks** routing.

Hide all: Hides all panels like the **browser**, **settings panel**, **patches**, etc., if they are opened.

MIDI/key/OSC learn: Turns Usine in MIDI/ OSC / Key learn mode.

Rec automation: Activates the automation recording for objects like the **knobs**, **faders** and so.

Lock: Locks/unlocks object to change their sizes and positions.

Reset Zoom: Restores the default Zoom scale.

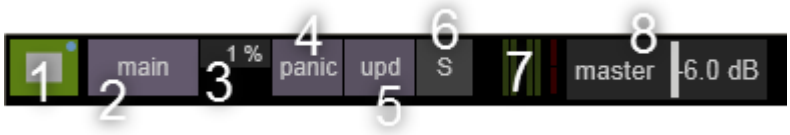
Zoom: Zooms (in or out) the selected object.

Setup: Displays the main Setup panel to adjust global settings like Audio sound card, MIDI Devices, personal folders, Plug-ins folders, etc.

Trash bin: Drag-and-Drop any object directly on this icon to delete it. A Left-Click will open it to restore deleted objects.

The Master Panel

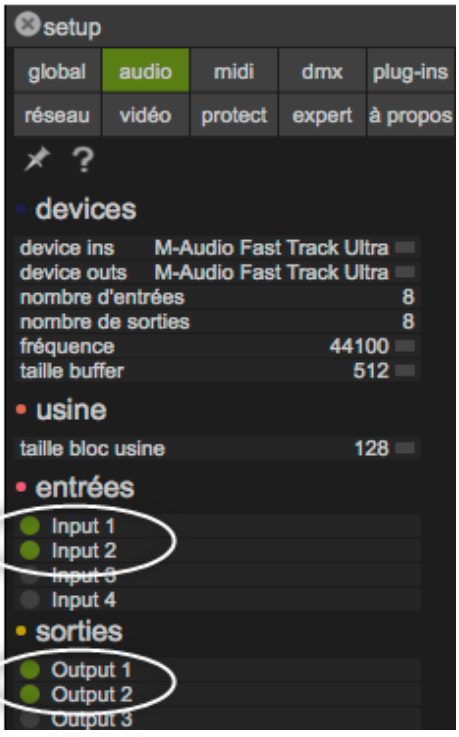
Master controls are located within this panel. The audio engine enable and the main volume fader are two of the most commonly associated controls with this panel. Among these several other useful master functions are available on this interface.

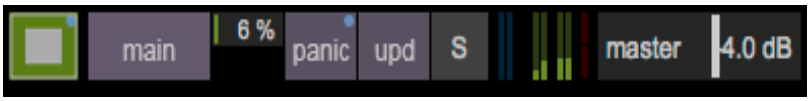


1. Main Usine's engine ON/OFF switch (audio engine). Must be active to run Usine.
2. **Workspace** selector switch (main/additional, discussed later within this manual).
3. CPU usage indicator.
4. Panic button to send an all note OFF message to plug-ins and MIDI outputs.
5. Remote Update button to force MIDI remote faders & **knobs** positions.
6. Solo **racks** indicator.
7. Vu-meters for all inputs/outputs (MIDI/OSC and Audio).
8. Master volume fader.

Audio and MIDI VU-Meters

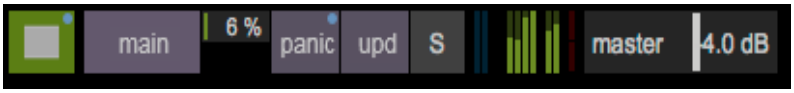
The **master panel** has audio and MIDI VU-meters, which allow you to monitor the activity and verify your **devices** are running smoothly. The number of visible VU-meters corresponds to the selections made in the **setup panel**.





Here we have two audio inputs and two audio outputs enabled in the audio tab of the **setup panel.** With this selection, the **master panel** now displays two VU-meters for input and two for the outputs.

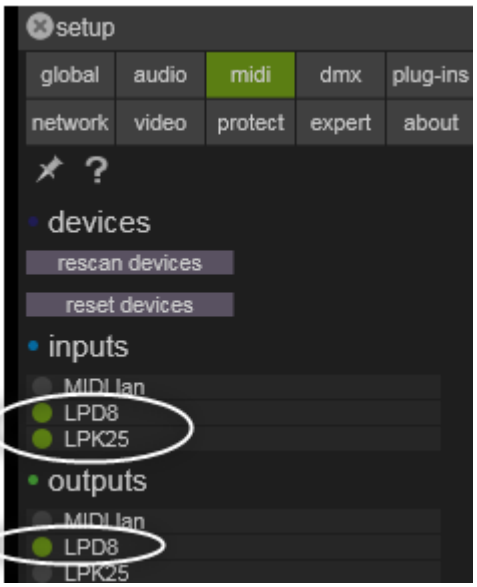
If we activate two additional inputs of our sound card in the **setup panel**, this will be reflected automatically in the **master panel**:



With four inputs selected, you can now see that four input VU-meters are visible on the **master panel**.

A closer look:

As you can see below, this system of displaying meters is also available for MIDI devices. Here two MIDI inputs and one MIDI output are activated, which adds a corresponding meter to the **master panel**. The MIDI VU-meter does not indicate a volume-unit, but it provides an activity indicator that reacts in response to incoming and outgoing MIDI messages.



The Master Synchronization Panel

Here is the main synchronization panel where you can choose your tempo and SMPTE settings to drive the samplers, MIDI sequencers, piano roll, the grid and all sequenced objects in Usine.

1. Synchronization ON/OFF switch. Must be active to run all sequenced objects.
2. Current position in the cycle (top number) and in the bar (bottom number).
3. Global tempo fader.
4. Button to restart the synchronization from the beginning of the cycle.
5. Tap tempo button. Click several times to create a personal tempo.
6. Tempo divider or multiplier by 2.
7. SMPTE current position.
8. SMPTE time code ON/OFF.
9. Button to restart the SMPTE from the beginning.

The Panel Menu

When the contextual menu is shown, the icons of this menu are displayed just to the top of the contextual menu. Several important functions and panels are available through these selections such as the mixer, the direct to disk, and the primary **devices panel.** The **devices panel** displays active audio and MIDI **devices** for use as inputs and outputs in your **racks.**

Devices panel: Displays active devices.

Toolbox: A panel which can be customized to place any control you want available within the panel.

Trace panel: Displays debug and system information such as incoming MIDI/network or internal messages.

Mixer: Displays a personalized mixer.

Playlist: List to organize several **workspaces** in a Playlist format.

Chat panel: Messaging platform to communicate with other connected members.

Direct to disk: Records your performance and concerts directly to your computer's hard-disk.

The Contextual Menu

By definition, this menu will be different depending of the selected object. In the example below a **patch** is selected:

At the top of the menu there are shortcuts available to access the **settings panel** tabs.

In order: *properties, design, size, network, remote, and the help icon.*

You'll also find standard commands such as delete, open, save, save as, etc.

9. What is an Audio Rack?

The concept of an audio **Rack** is very similar to that of a guitar player's effect pedals, or an effects rack in professional studio where you can manage routing by cables.

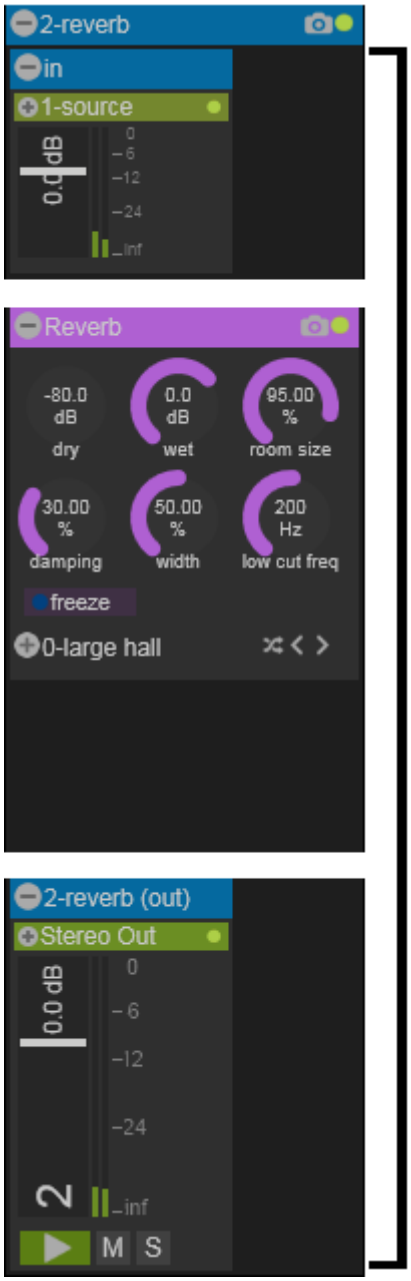
The basic concept of a **Rack**:

1. An audio input source (microphone or instrument) (MIDI Controller or Audio Input)
2. Some effects or processing chain (Effects)(Samplers, FX, Processing)
3. An audio output (Speakers, Console) (Audio Output)

1) Source

2) FX Racks

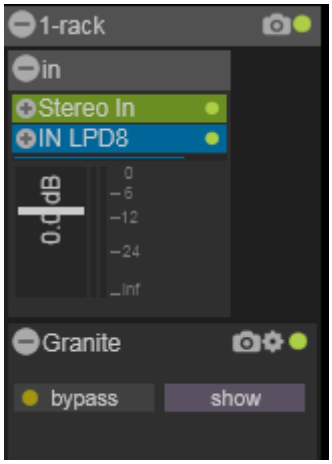
3) Outputs



As we'll see later, you can Drag-and-Drop any **device** (audio or MIDI) on inputs/outputs of a **rack**.

Rack input/output

Rack input: You can Drag-and-Drop any devices from the **devices panel** on the input of a **rack**. Here a stereo audio input and a MIDI controller have been placed. Incoming messages will be indicated by activity on the blue vu-meter when using this controller.



Rack output: Works the same manner as the **Rack input**. Here a stereo audio output and the same controller, for example to provide MIDI feedback for motorized controls or synchronization.

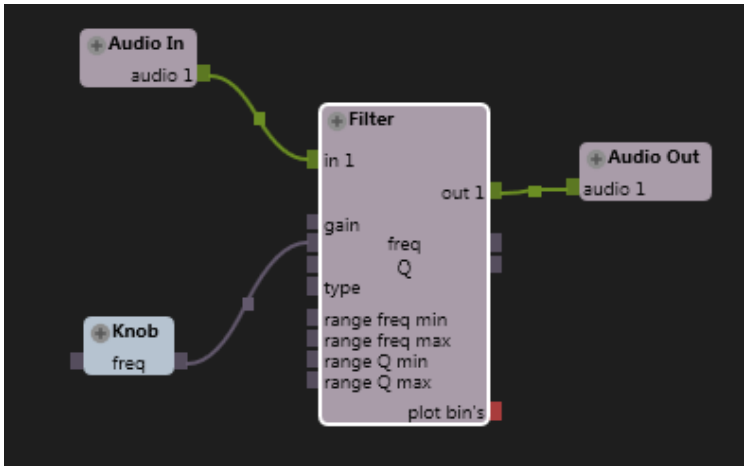
10. What is a Patch?

A **Patch** is like a building kit where you can add and combine **Modules** (the smallest part within the Usine hierarchy) and connect them together with virtual wires.

The structure of a patch can contain non-visible processing, math, or functions as well as interface design objects such as knobs, faders, buttons, etc…

A **Patch** consists of two things:

1. The underlying **Patch** structure which is visible in the **Patch Editor**.
2. The visible design objects or the **Control Panel.**

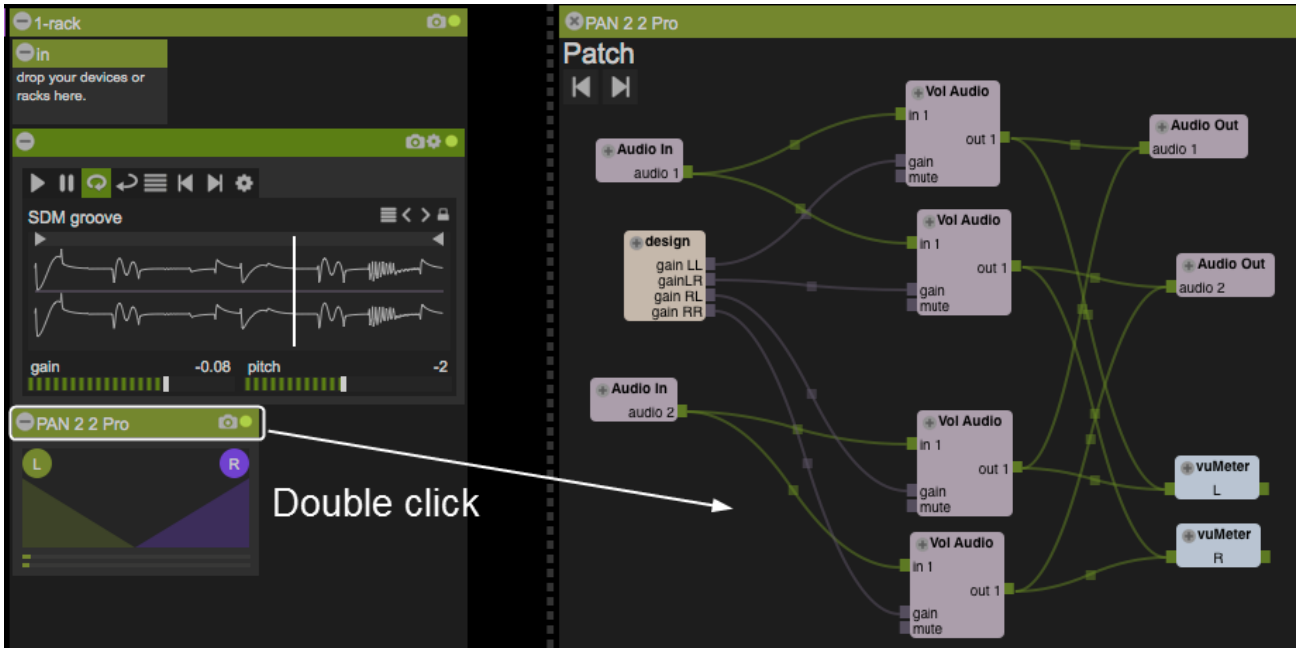


(1) A simple filter **Patch** made of a filter **module** and a **knob module**

(2) The visible part **(Control Panel)** contains the filter design and a **knob**

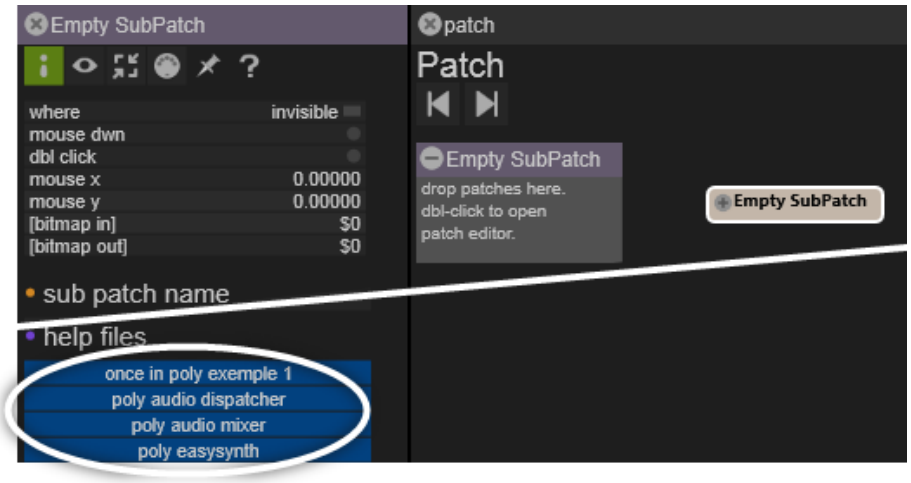
The Patch Editor Window

We will see later how to create **patches**, but for a first overview, you can Double-Click on any **control panel of a patch** to see its structure and open the **Patch** window, here you will see the panner **patch**:



Integrated Help Files

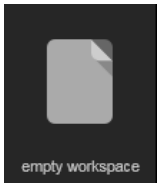
In the **properties panel** of several objects you can see blue **buttons** located under help files. Once clicked, each one of them provides a usage example to help guide:



11. Tutorial: Workspace Introduction and the Normal Sampler

Here is a first exercise in which you will discover more about the Usine environment.

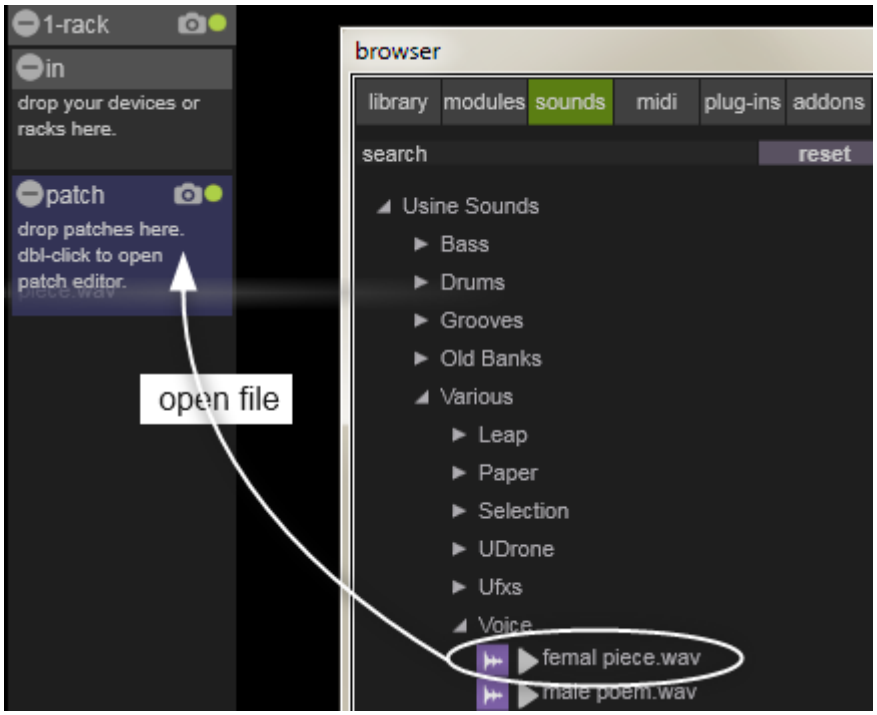
If a workspace is already open, return to the **Start Page.**



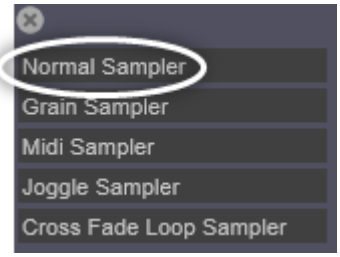
At the **Start Page** select the empty **workspace** icon to start a blank workspace.

Select this icon from the left-hand side, Main Icon Menu Bar to open the **browser**.

Select the sound tab and choose the sound named *femal piece* from the *various/Voice* folder. Drag-and-Drop this sound file directly onto the empty **patch** in the default rack as shown:

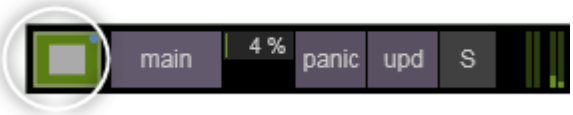


A pop up window will appear with several available **templates**. For this demonstration select the **Normal sampler**; the **Normal sampler** is the most basic sampler choice available in Usine.



Once the **template** has been selected it will create the sampler in place of the patch as shown:

The next step is to make sure that the audio engine is enabled (if not already done so). This can be done by pressing the [SPACE BAR] of your keyboard, or by the audio engine **switch** in the Master Panel as shown:



Quick Overview of the Controls for this Template

Play

Pause (loop and auto restart options must be disabled in order to pause)

Enables and starts the continuous loop mode.

Plays the sound in a reverse mode.

Opens the samples list window for the sampler (Currently we only have one available sample within our list. To add additional sounds; files can be dropped onto the sampler waveform or managed with the sample list window.)

Navigation **buttons** for the samples list.

Locks the **sample view** to avoid any changes.

Gain fader: Volume as applied to the output.

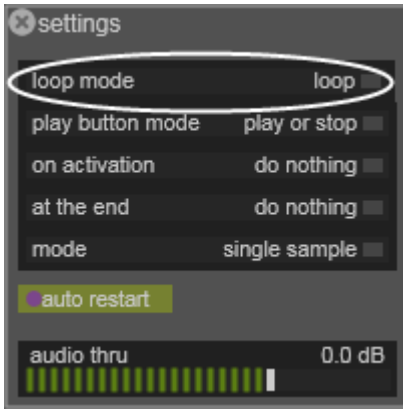
Pitch fader: Pitch transposition value (in semitones).

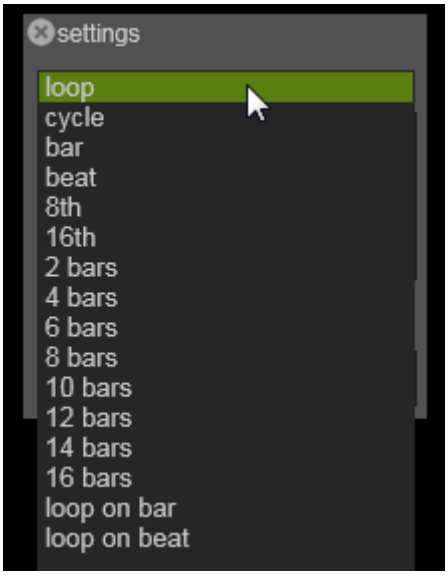
Changing Synchronization Modes

On the header of the sampler **patch,** selecting this icon will open a pop up settings window. This window will give access to additional parameters, and in this case synchronization modes.

Click on the loop mode **combo box** to select the different synchronization modes.

Although we will not go much into detail regarding all the available parameters of the pop up within this section, note that various options may be available such as the loop mode in this specific case.





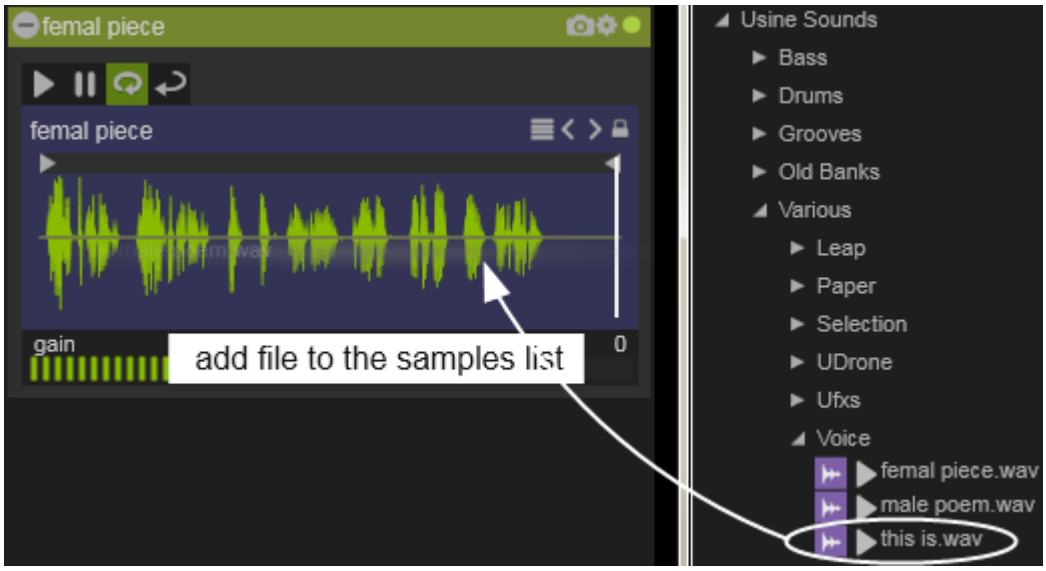
Here are the different synchronization modes that are available:

Loop mode: (Synchronization options)

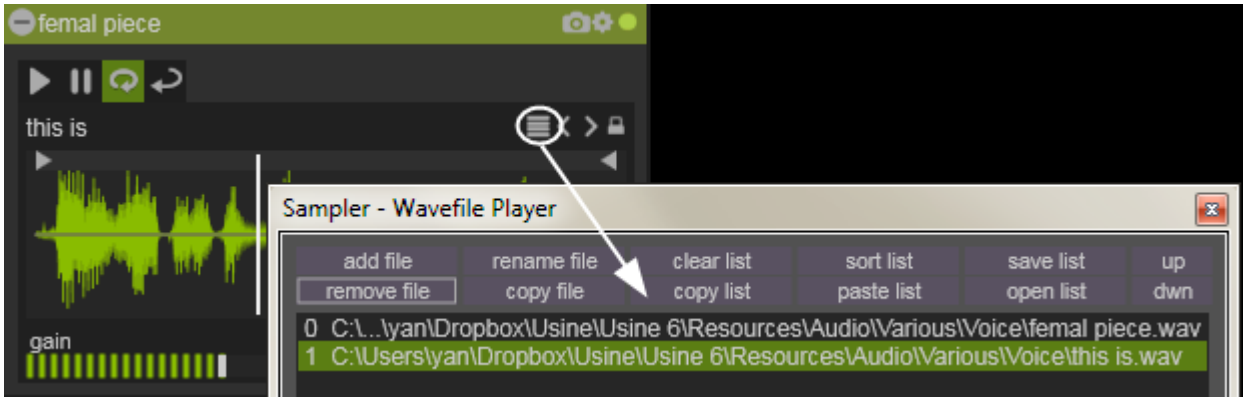
- **Loop**: The sample is played in a continuous loop mode.
- **Cycle**: The sample is played at the beginning of the cycle.
- **Bar**: The sample is played at the beginning of each bar.
- **Beat**: The sample is played on the beat.
- **Eighth note**: The sample is played on each eighth note.
- **Sixteenth note**: The sample is played each sixteenth note.
- **2/4/6/8/10/12/14/16 bars**: The sample is played at the bar count as indicated.
- **Loop on bar**: The sample is played entirely as in loop mode. At the end of the loop however, the sample will restart at the beginning of the next bar.
- **Loop on beat**: The sample is played entirely as in loop mode. At the end of the loop however, the sample will restart at the beginning of the next beat.

Creating Your First Sample List

If you want to change the currently selected sample, or add additional samples; simply Drag-and-Drop a new sample onto the wave display of the template:



Select this icon to open the samples list:



In this samples list window you will find several commands to add, remove, sort, and rename your samples. The option also exists to save a list and to reload them easily into another **workspace**, or even to copy and paste between different lists altogether.

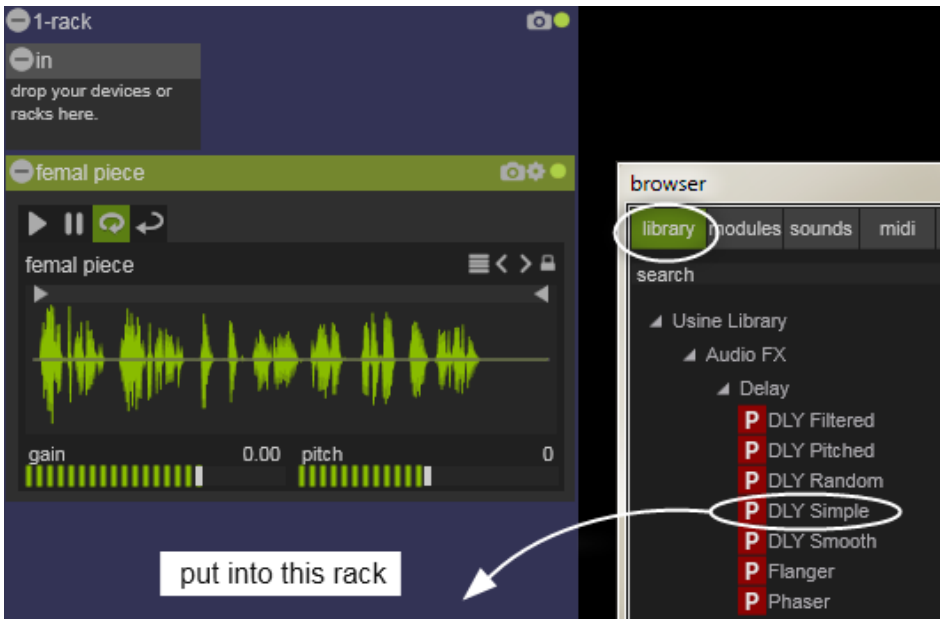
On the sampler **patch** you can also use the icons (previous and next) as shown below to navigate through the list:

Adding an FX Patch to the Rack

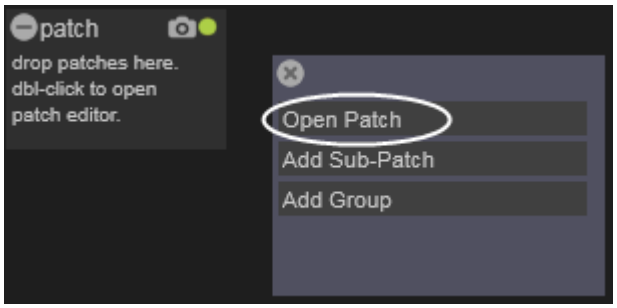
We can now add our first audio effect **patch**. Once again the Drag-and-Drop method will be used to add this patch to our **Rack**.

Open the **browser** by Clicking on this icon (or by using the shortcut `[CTRL/CMD+B]`).

Within the *Usine Library/Audio FX/Delay* hierarchy, choose the patch named *DLY Simple* and Drag-and-Drop it just below the sampler we previously created.



A new empty **patch** will be created and a pop up window will appear. Here we will choose the option *open patch.*

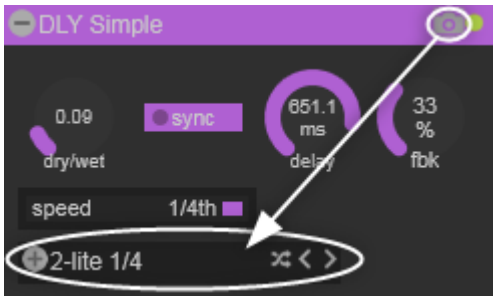


The new delay **patch** will be automatically created below our sampler within the **Rack** as shown:

Take some time to familiarize yourself with the parameters that are available.

As with most of the library **patches**, this delay **patch** has several pre-recorded presets available. These presets can be used to help quickly audition and discover the possibilities of the **patch**.

On the header of the delay **patch**, Click on this icon to display the **preset panel.**



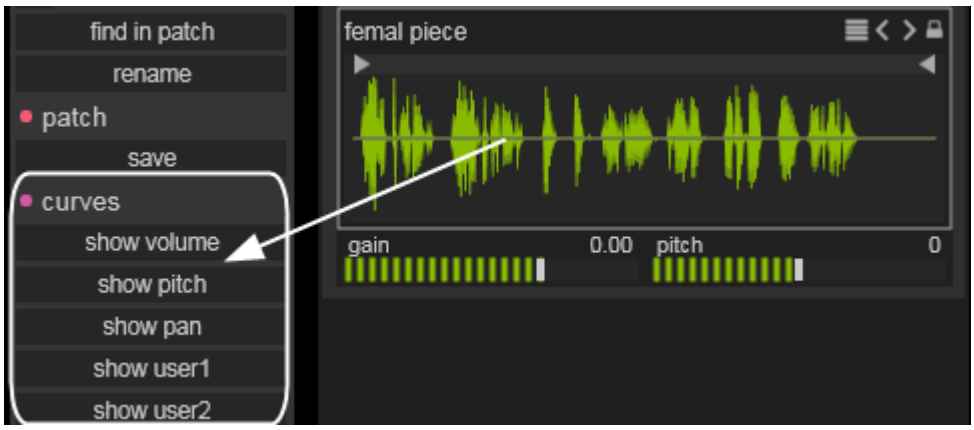
Once opened, you can use the navigation icons to test several different presets.

Creating Automation

To animate the **rack** we will demonstrate and use two different methods for adding automations. The first method will be shown directly on the wave display of the sampler, while the second demonstration will be done on the delay **patch**.

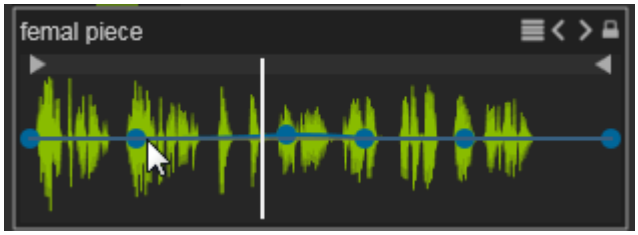
Creating Automation with Sampler Curves

The sampler provides five internal curves. First, click on the wave display of the sampler. The **contextual menu** will display the available curve commands as shown:

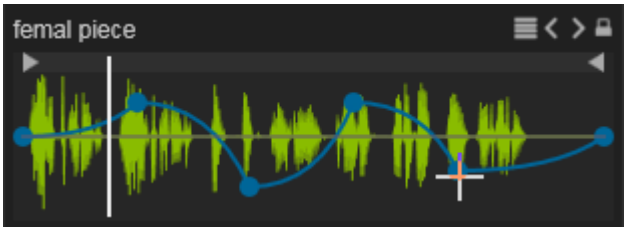


For this example, Click on *show pan* to display this panoramic curve directly on the waveform:

Double-Click on the line to add a point.
(Another Double-Click will delete it)



Click and move each point to create an interesting pan curve.



Recording Automation for Control Objects

A second way to create automation in Usine is to use the movement recording. For this example we will demonstrate on the delay **patch** we previously added to the **Rack**.

Click this icon that is located on the left-hand side Main Icon Menu Bar.

Once selected it will turn red to indicate recording has been enabled.

Slowly move the dry/wet **knob** from 0 to 1.

Again click the icon to stop the recording.

A curve is created and added as shown:

You can edit this new curve in the same way we had done to the pan curve of the sampler (Double-Click to create or delete new points, or Click and move to change the position)

Adding a New FX Patch to a Second Rack

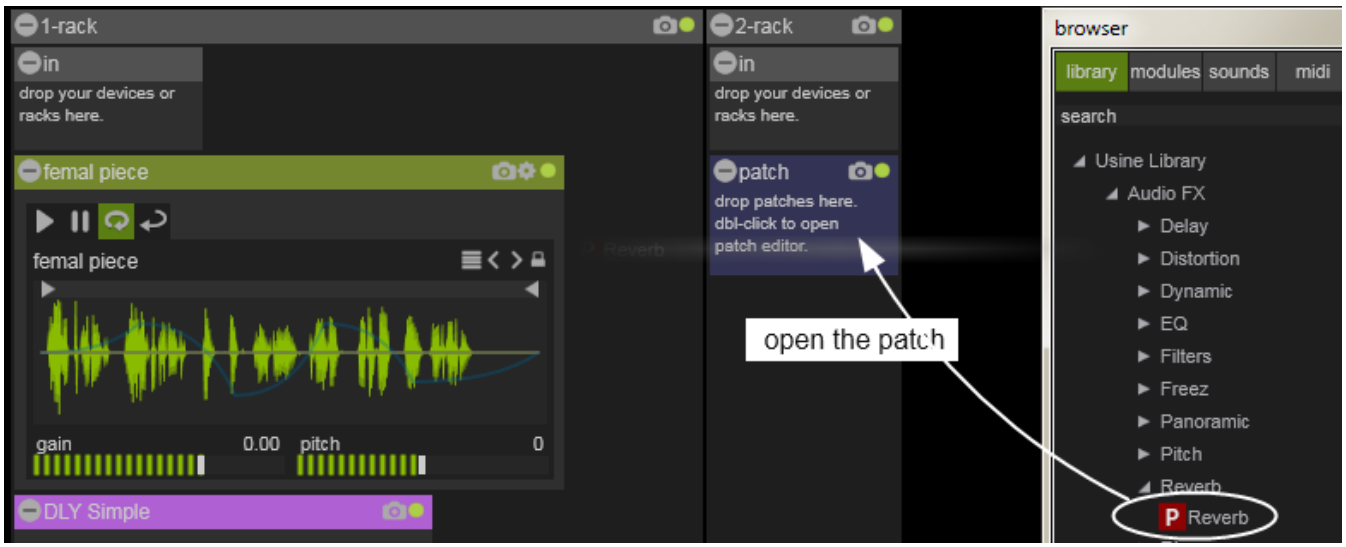
In Usine you can easily route a **rack** into the input of another one. This can be useful to have independent FX or to route several **racks** into one. This common method provides the ability to bus, parallel route, or create a master **rack.**

This section will demonstrate a simple routing example to add a parallel reverb to this first **workspace** tutorial.

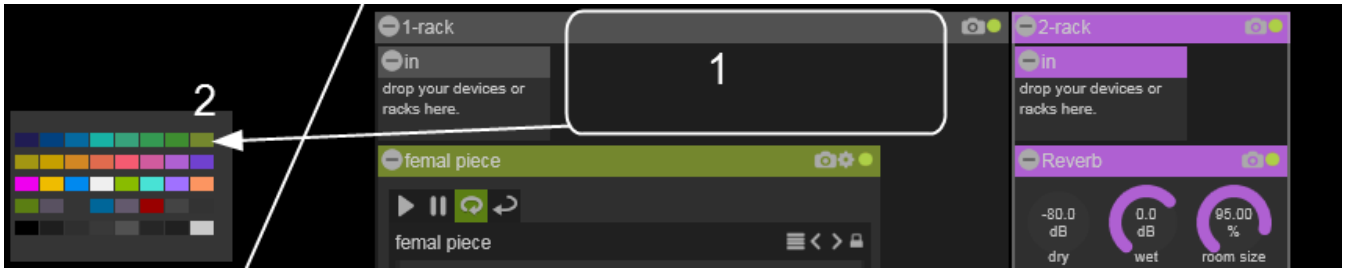
Use the shortcut [CTRL/CMD+T] to create a new **rack** or Click on an empty part of the **workspace** and choose *add a new audio* **rack** from the **contextual menu.**

Once the new **rack** has been created, open the **Browser** by selecting the icon.

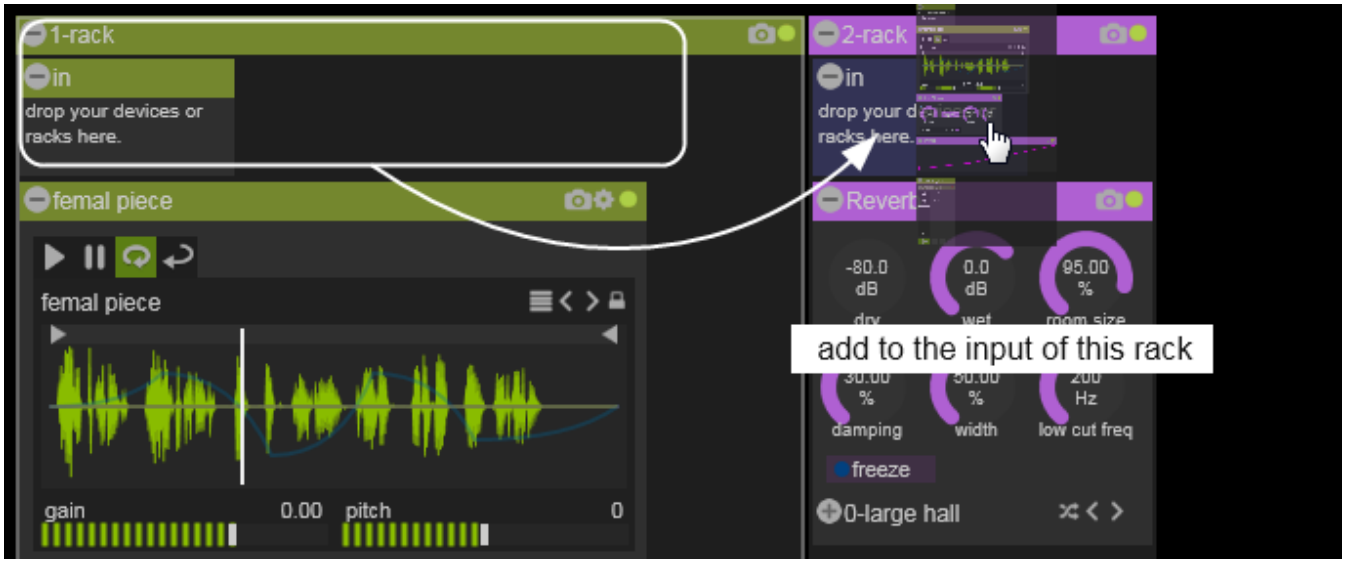
Navigate to the *Usine Library/Audio FX/Reverb/* within the browser and Drag-and-Drop the reverb **patch** to the newly created **rack** as shown:



For a better visualization of our **workspace**, we can add colors to each **rack.** Click on the header or in an empty place of the **rack** to select it, and then click on a color of the **quick palette**.



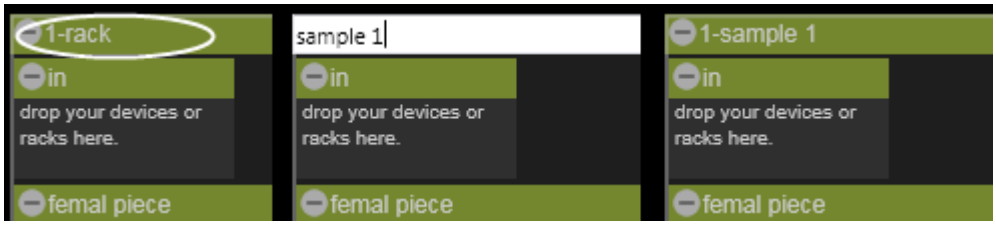
Once the two **racks** have been colorized, we can now route the first one to the input of the second. Click on the header or an empty place again to select the **rack** 1 and Drag-and-Drop it on the input of the **rack** 2 as shown below:



Again, make sure that the audio engine is enabled (if not already done so). This can be done by pressing the `[SPACE BAR]` of your keyboard, or by the audio engine **switch** in the Master Panel as shown:

With the engine enabled, you will see that the output vu-meters of 1-rack are also in movement within the input of 2-rack.

To improve the organization of your workspace you can rename these **racks** using the shortcut `[ALT + CLICK]` on the **rack** header.



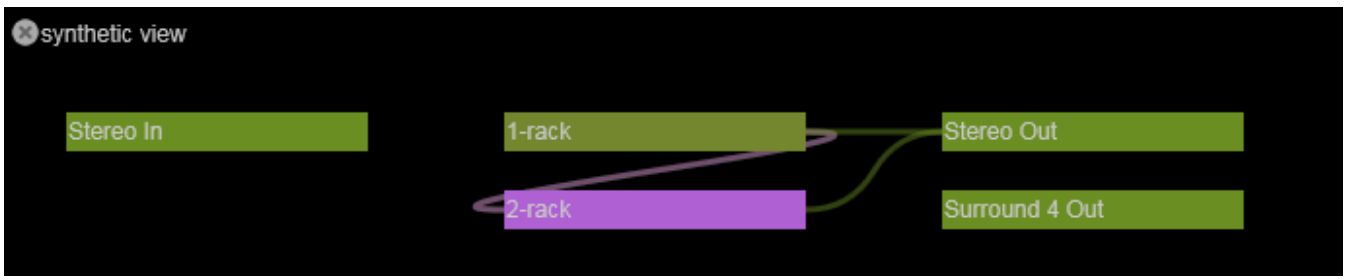
Using the Synthetic View

Usine provides a tool to visualize your **workspace** routing called the **synthetic view.**

Select this icon from the left-hand Main Icon Menu bar to open the **synthetic view.**

We can now see within the **synthetic view** the following:

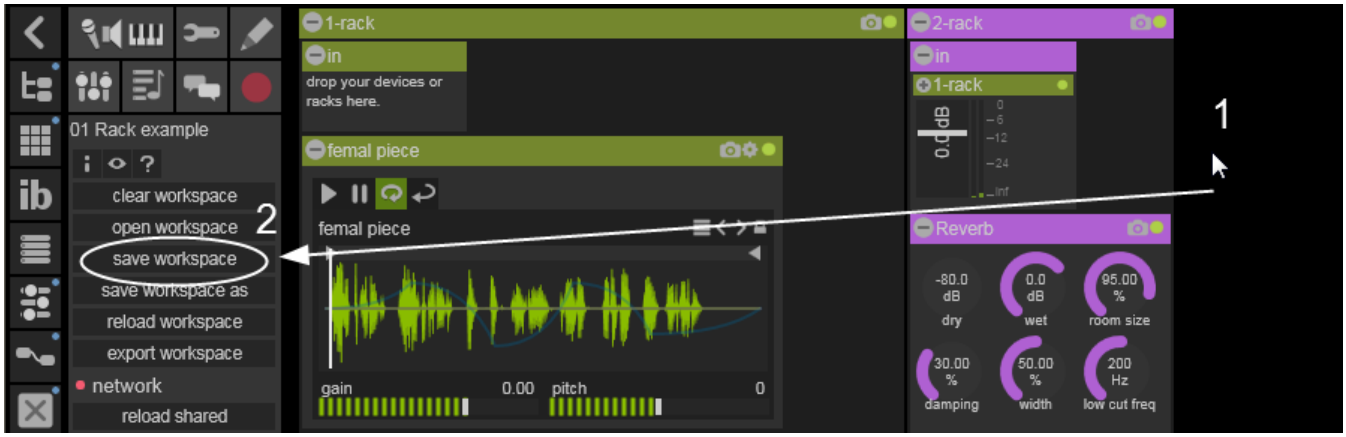
- **Rack** 1 and **rack** 2 are routed to the stereo output.
- **Rack** 1 is routed to the input of **rack** 2.



Saving Your First Workspace

This first **workspace** is now finished. Within this tutorial we have discovered several of Usine's concepts and it is now time to save.

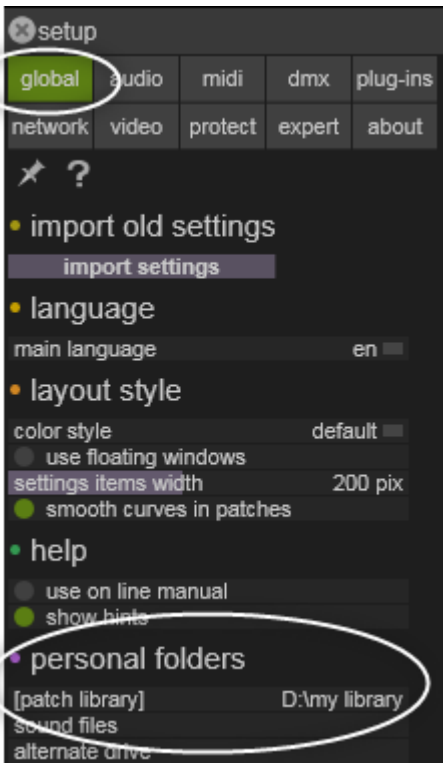
Click somewhere in an empty area of the **workspace** to display the **contextual menu**, and select the *save workspace* button; a standard query window will open to provide details of the location and name of your **workspace**.



A good idea would be to create a specific personal directory to save all your **patches** and **workspaces**. You can then add this personal folder into your preferences in the **setup panel**.

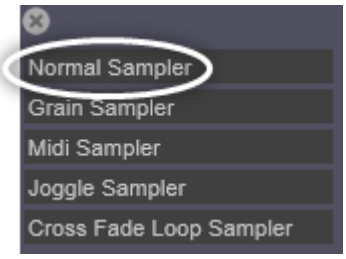
Open the **setup panel** with this icon and select the setup/Global configuration tab

Add this new directory as your **patch** library path:


setup
global
audio
midi
dmx
plug-ins
network
video
protect
expert
about
import old settings
import settings
language
main language
en
layout style
color style
default
use floating windows
settings items width
200 pix
smooth curves in patches
help
use on line manual
show hints
personal folders
[patch library]
D:\my library
sound files
alternate drive

12. Overview of the Sampler Templates

When you drop a sound on a **workspace**, **rack,** or **patch,** Usine prompts with a choice of samplers via a pop up menu:

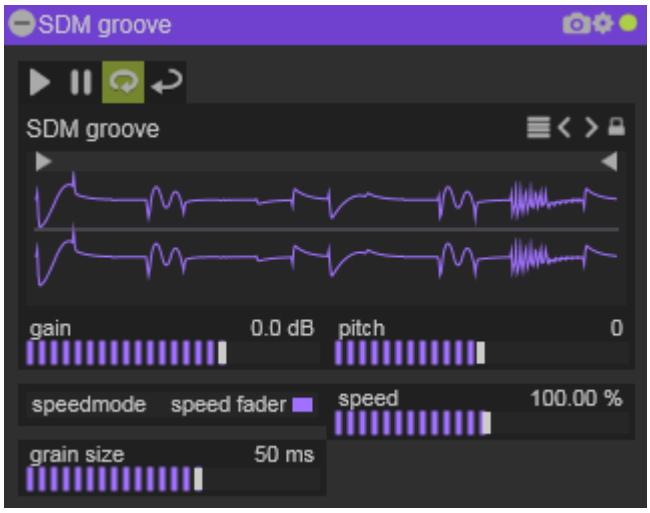


This section details the different characteristics of each of these samplers.

The Normal Sampler

The normal Sample player provide an array of quantization tools with common modifiers such as pitch, gain control, and reversal to alter sample content. So it can be used for many situations when you need to trigger/ loop sounds with quantization options.

The Grain Sampler



The Grain Sample player and the Grain Sample player recorder provide similar functionality as the normal sampler, however with the addition of a powerful granular engine. Grain options include things such as the Grain size duration, speed synchronization, manual percentage adjustments, and the ability to choose windowing options to shape the grains.

The granular engine allows the ability to modify the speed of the sample playback without affecting the pitch of the content. It can be used for example, to adapt a drum loop to a different tempo while maintaining pitch and the original percussive elements. Interestingly, the Grain Sampler can also be used to create really particular sounds, drones, and more.

For Drums loops, the grain sampler works well for speed modification between 80% and 150% of the sample's originally recorded tempo.

Common Settings for Normal and Grain Sampler Templates

The Normal and Grain sampler templates have a common settings panel.

You can use this icon in the header of either of these samplers to open it:

Play button mode

- **Play-replay:** First Click plays the sample (One-Shot); Second Click restarts the sample.
- **Play-stop:** First Click plays the sample (One-Shot); Second Click stops the sample.

On activation

These options are useful for grid activated racks and patches to trigger on-activation.

- **Do nothing:** When the **patch** activated it's played according the loop mode status.
- **Play once:** When **patch** activated the sample is played once and stops at the end.

At the end

- **Do nothing:** When the sample reaches the end, it stops.
- **Next grid line:** When the sample reaches the end, the grid moves to the next line.

Mode

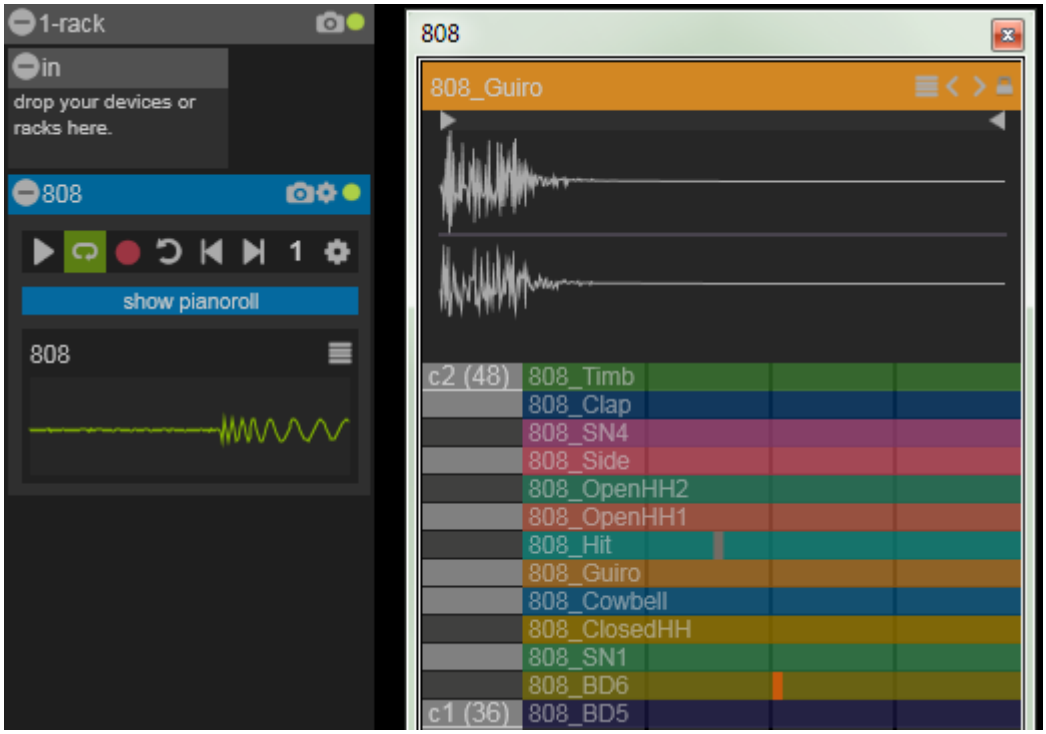
The Mode options provide a means to sequentially or randomly iterate through the sample list. This provides interesting results as several sample files can be sequentially or randomly played one after the other.

- **Single**: The selected file is played in a loop.
- **Next**: The sample is played through, then the next file is selected to play.
- **Previous**: The sample is played through, then the previous file is selected to play.
- **Random**: Plays files in a random order.

Auto restart: Restart when the main audio engine is turn ON.

Audio thru: Audio thru level.

The Midi Sampler



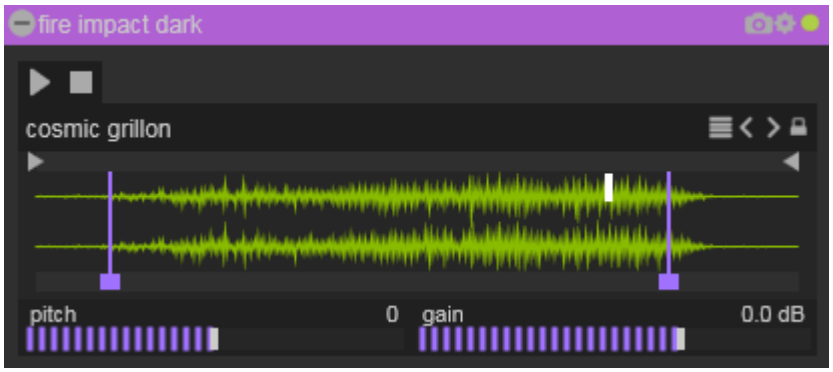
The MIDI Sampler can be used to directly interface with incoming MIDI. Like classic samplers, these **modules**/**patches** provide key-to-pitch playback of the sample material. You can also create a multi-layer sampler where you map several samples to create a full range instrument from several source files or Drum kits.

This allows the use of any MIDI keyboard or MIDI enabled **module** such as the Sequenced Step MIDI, Random MIDI Out, and Piano Roll to control triggering and playback of the sampled audio.

The Joggle Sampler

With the joggle sampler, you use only one **fader** to interact with the speed and direction of the sample. This function is useful to smoothly play a sample in forward and reverse direction, while controlling how fast or slow the playback speed responds.

The Cross Fade Loop Sampler



The cross fade sampler is useful to create a smooth loop from a portion of an audio file that is placed between these two markers.

13. Devices

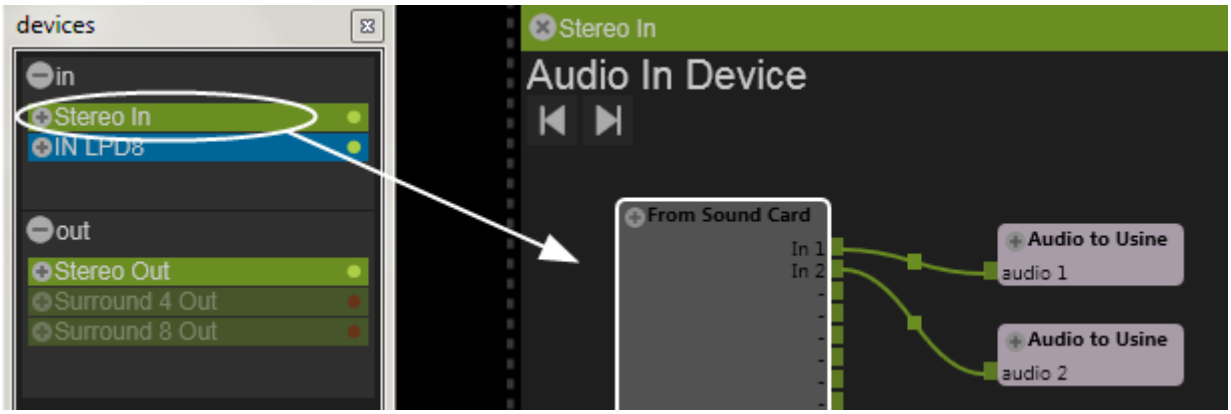
Devices Overview

We can now easily understand that an audio **device** in Usine corresponds to our sound card however, this notion is sometimes more advanced than it appears. So far in our **workspace** examples we have used a simple stereo audio output. In the following example we will create a secondary device that utilizes the same sound card, while providing a different configuration of inputs and outputs. Along with this tutorial, a basic **Audio Rack** routing can be clearly visualized.

Audio Devices are Patches

The first thing to understand is that **devices** in Usine are also **patches** and can be edited, modified, and saved like any other **patch**. To illustrate this concept open the **devices panel** with this icon:

Double-Click on the default audio input **device** named *stereo in,* this will open the corresponding **patch** edit window and confirm our entry corresponds to the 2 first physical inputs of our sound card (audio 1 and audio 2).

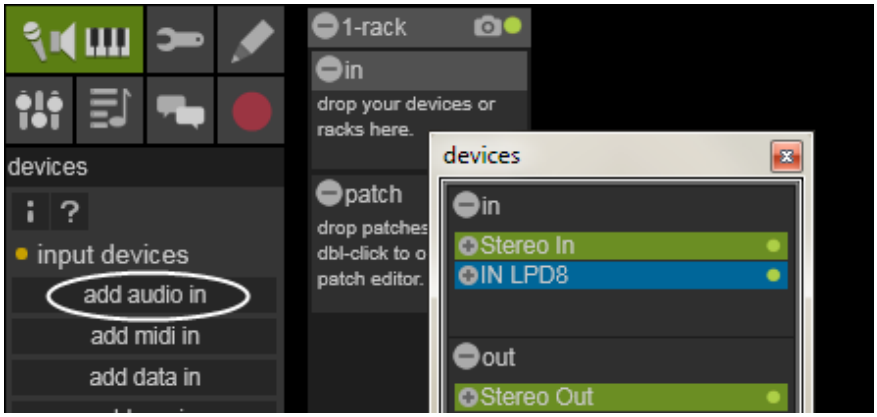


How to Create a Mono Device

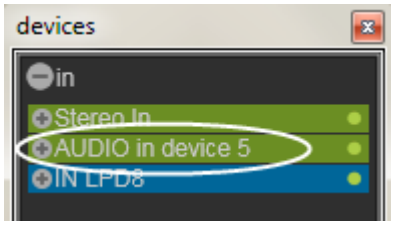
In a live situation we often need mono **devices** for microphone or instrument inputs.

To create a mono device:

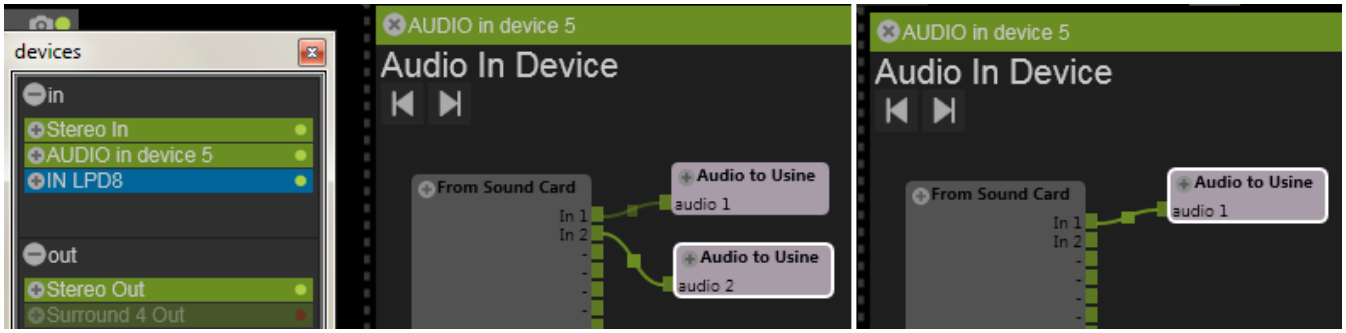
Select the **devices panel** and Click on *add audio in* within the **contextual menu:**



A new audio in **device** is created with a random name.

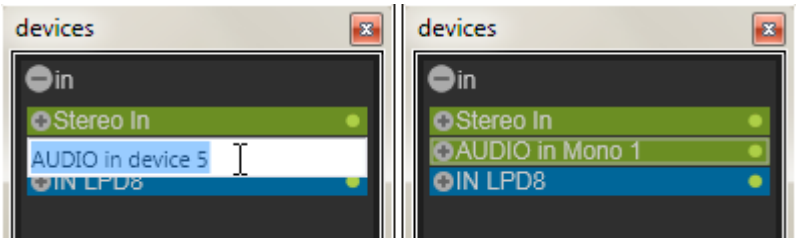


By default a stereo **device** is created. Double-Click on the new device to open the **patch editor** window. Select the *Audio to Usine* **module** *audio_2* and delete it:



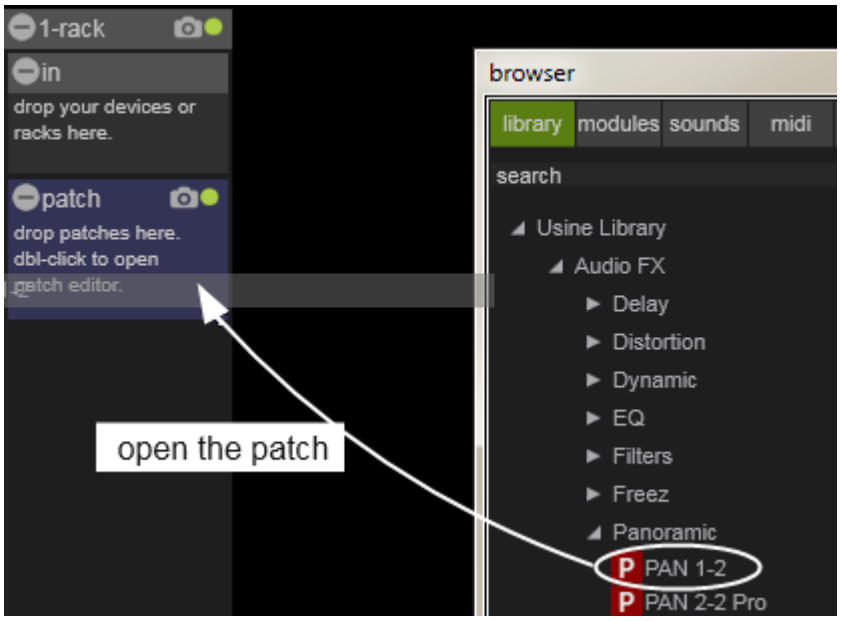
We have now created a mono **device** using the first entry of your soundcard.

You can rename the device using an `[ALT+CLICK]` directly on the **device** name as shown below*:*



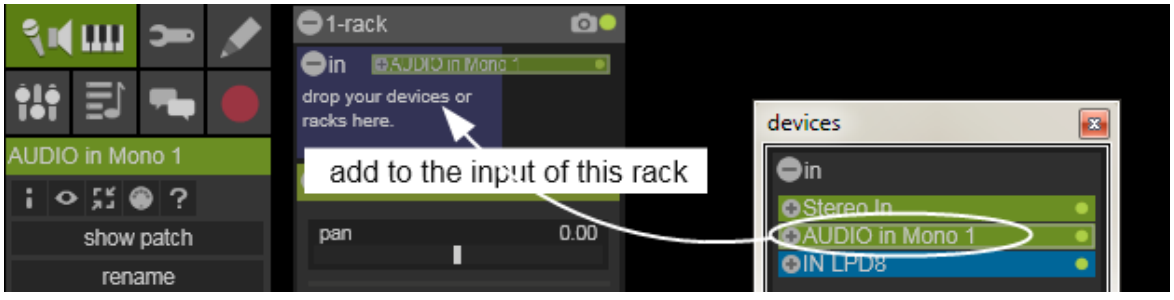
Example: Use an Audio Device in an FX Rack

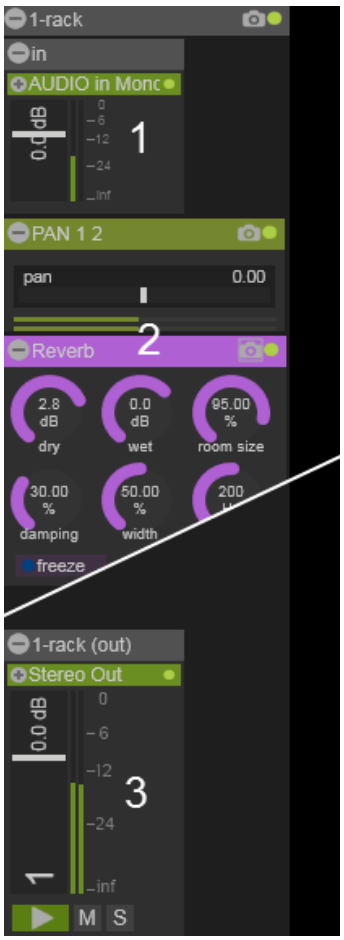
To illustrate this **device** exercise, Drag the **patch** named PAN *1-2* on the empty **patch** of a new **audio rack.**



We can add a second FX **patch** below, such as the reverb:

Open the **devices panel** again and Drag your new mono **device** onto the **rack input** panel:



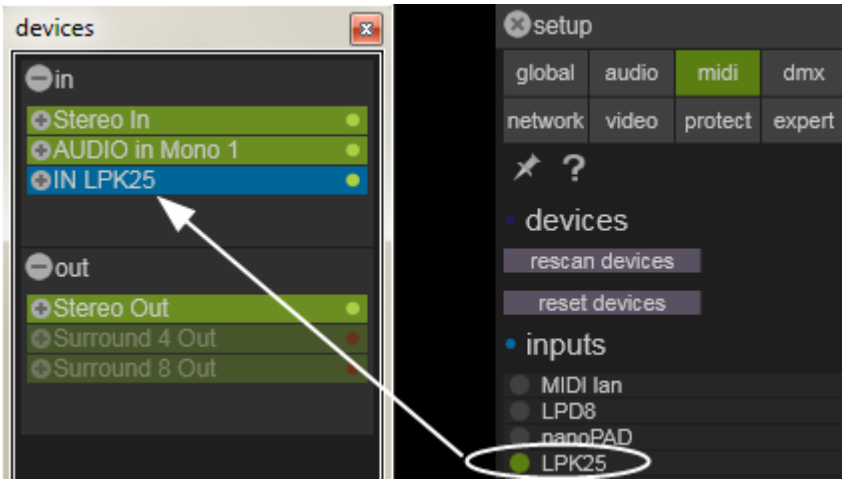


We have now completed the example while demonstrating the following basics of an **Audio Rack**:

1. A Mono Audio input **device**
2. Some FX's **patches** in series
3. A stereo Audio output **device**

Example: MIDI Device with the Template MIDI Sampler

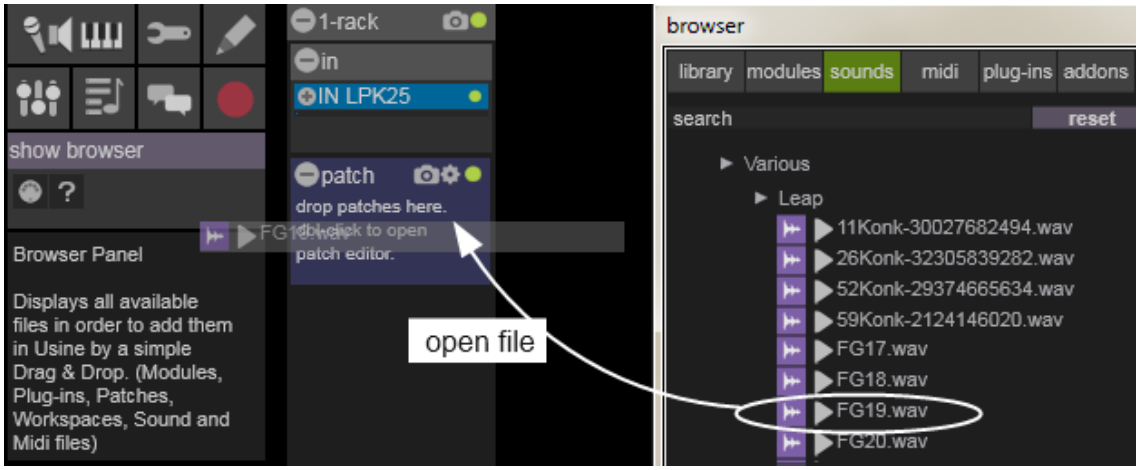
First, activate your MIDI **device** in **the setup panel**/MIDI tab



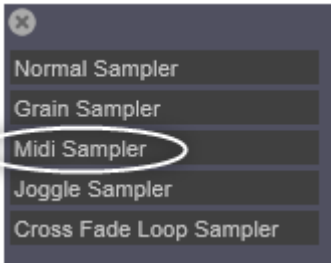
Drag this MIDI **device** directly on the **rack input**

Next drag a sample onto the first empty **patch** of your **rack.**

(*FB19.wav* file from the *browser/sounds/Various/Leap/)*



In the pop up window select the Midi Sampler:



When you play this sample with your MIDI keyboard you will see 3 indicators:

1. A MIDI led in the **master panel** which tell us the MIDI **device** sent MIDI messages.
2. A second one in the **rack** to confirm the MIDI entered into this **rack** through the **device panel**.
3. The last indication that the MIDI Sampler is playing: The **rack device**

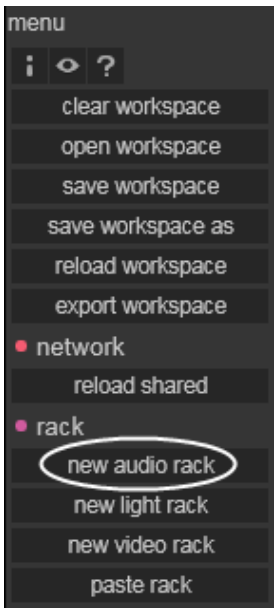
   Stereo Out, will display a change of the vu-meter levels as you play.

14. Patch

With Usine you have the ability to modify any of the library patches that are provided. This approach allows creation by example and can be used to build a personal and modified library that is tailored to your own designs.

Build a Delay Patch

First Click on an empty zone of an empty **workspace** and use the *new audio rack* **button** in the **contextual menu** to add a new **rack**; you can also use the shortcut [CTRL/CMD+T].



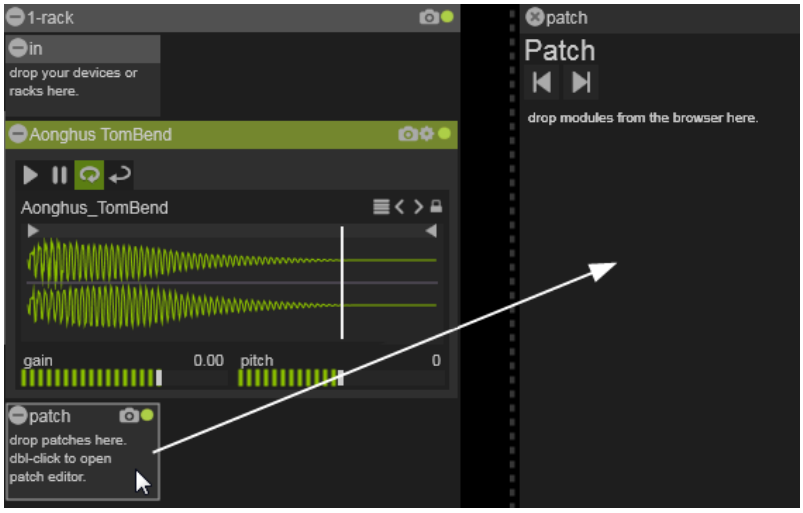
First we will create a normal sampler by using the Drag-and-Drop method as shown before.

Select the *Tombend* file from the *Drums/Aonghus kit* folder.

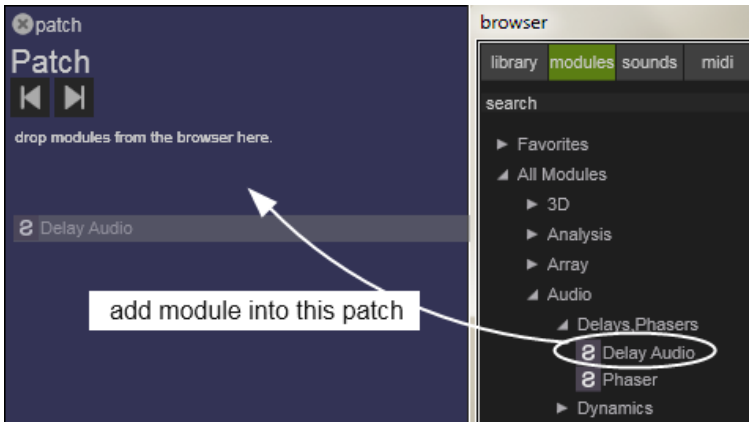
Once created, click on the **rack** to select it and to display the **contextual menu**.

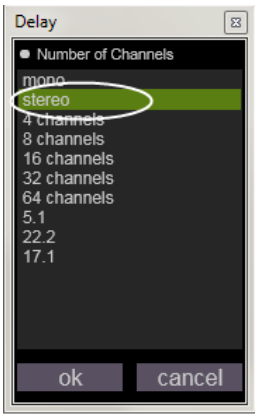
Click on *add new patch*.

Double-Click on this new empty **patch** to open the corresponding **patch editor** window.



In the **browser** open the modules tab and navigate to *All modules/Audio/Delays.* Then Drag-and-Drop the *delay audio* **module** into the **patch editor** window. A pop up will appear and ask us how many audio channels (inputs/outputs) we want. Select stereo as shown:



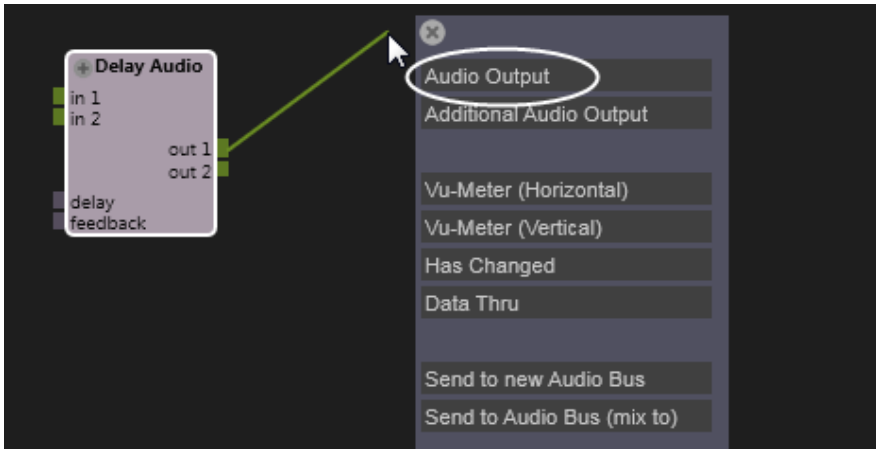


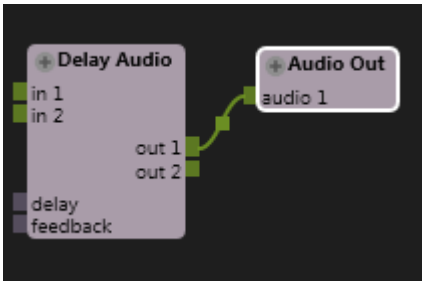
Once the **module** is created we will see several inputs/outputs. These are called **inlets/outlets**.

If we mouse-over one of these outlets we will see the **connection type**. In our example here we have mouse-over the out 1, which shows us that is of *type audio.*

Click on this **outlet** *out 1* and Drag a wire and release this wire into an empty space.

A pop-up menu will appear. Choose audio output as the output module.

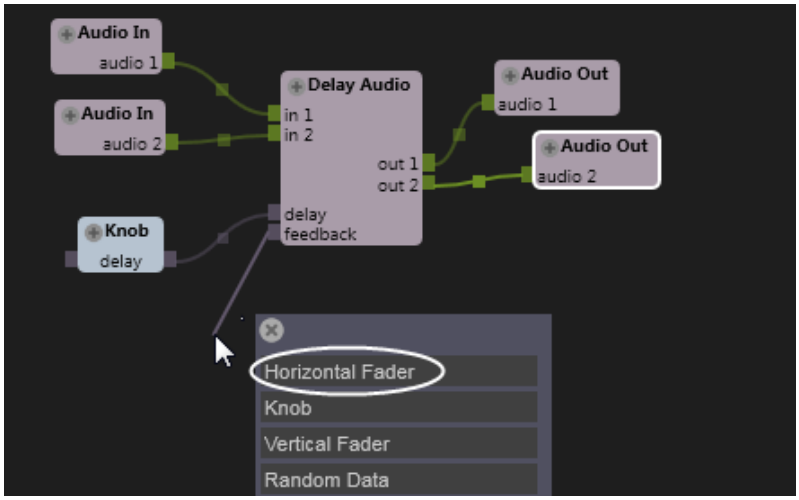




A new Audio Out **module** has been be created

Repeat this procedure for the second output and for the two corresponding inputs to create the audio input and output needed.

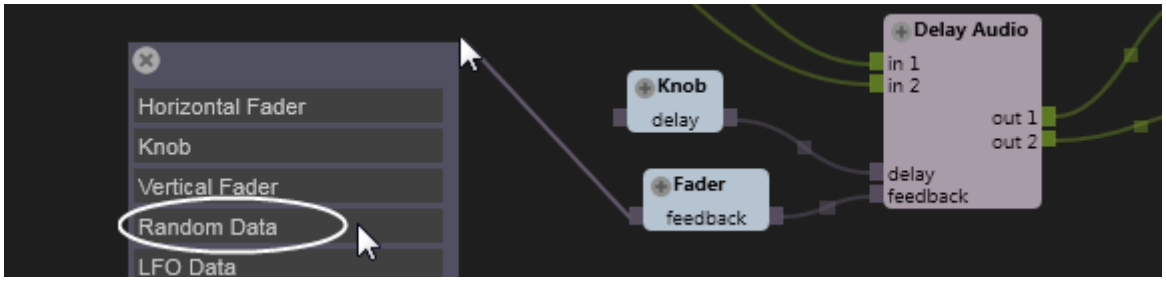
Using this same method, choose a **knob** for the **inlet** delay and a horizontal fader for the feedback parameter:



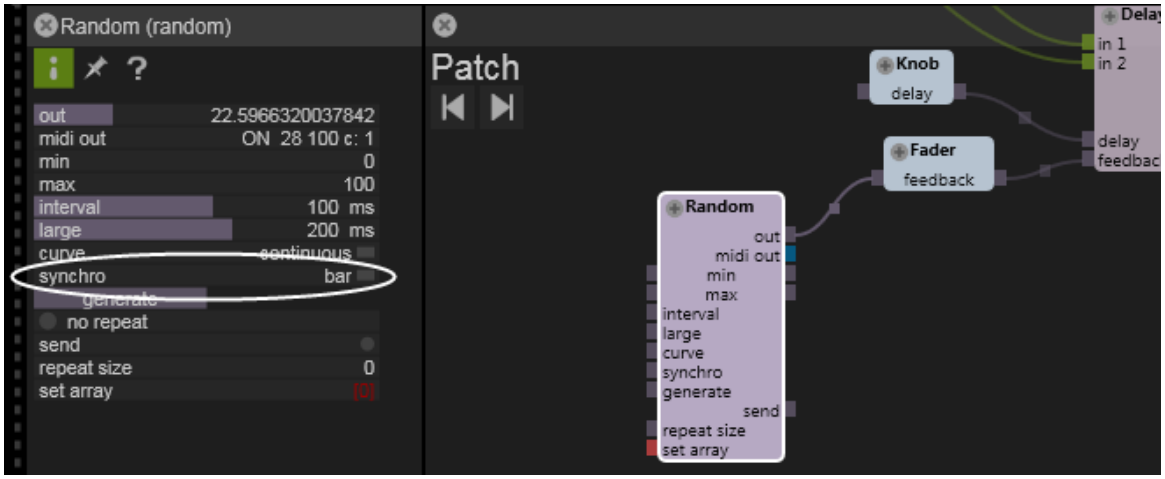
On the **control panel** we will see our **knob** and fader created. You can now start the sampler in loop mode and test your new delay **patch**.

Add a Random Module

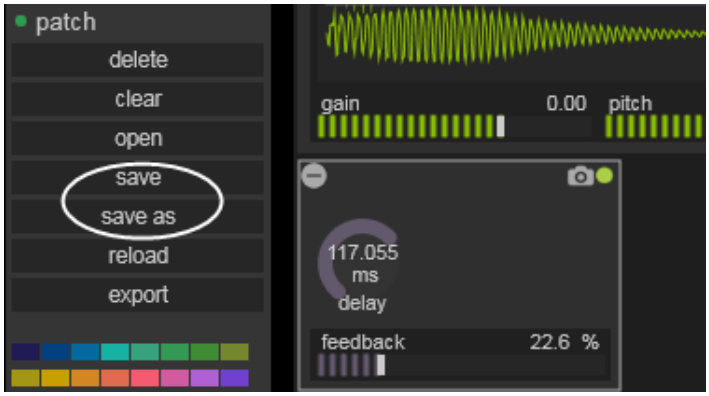
To "animate" this effect, we can add random values for the feedback parameter. Drag a new wire from the fader **inlet** and choose the *random data* module:



To have a more interesting result, select this new random **module** to display its **settings panel** and experiment with the synchronization value for this **module**. Here we chose *bar:*



You can also save this **patch** into your personal library using the *save* and *save as* commands of the patch's **contextual menu**



Along with the standard commands of the **contextual menu**, you will notice two unmentioned commands below:

Reload: This can be useful when you want to go back to the original state of the saved **patch**.

Export: This is useful for sharing a **patch** with someone else. This export command will create the **patch** with all the samples included and saved in a separate folder.

15. Modules

The Settings Panel for Modules

The settings panel will be different for each **module**, however this section will cover some of the common parameters you will use frequently.

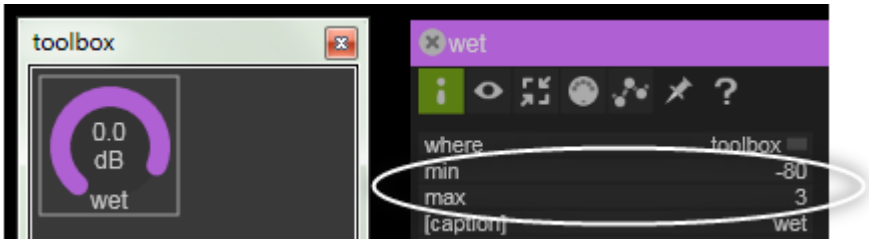
Where

The where option lets you decide where your **module** will be visible. As shown a **knob** of the reverb **patch**, was set by default to the *control panel*. We decided to set the control's *where* option to make this **knob** only visible within the **toolbox**. With this setting, when a reverb **patch** is minimized, the **knob** parameter is always accessible and visible in the **toolbox.**

Use this icon in the **panel menu** to open the **toolbox**

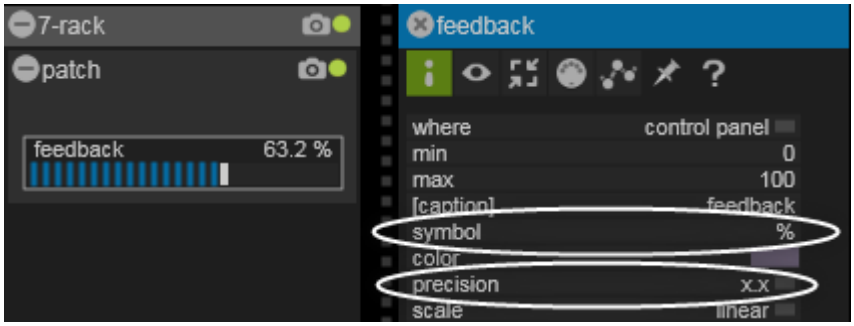
Min / Max Values

If you need to set minimum and maximum values for a **module** you can change these in the **settings panel.**



Symbol and Precision

Symbol and precision factors (from integer up to five decimal) are often useful to clarify your **patches.** The precision allows a higher or lower resolution depending on the specific needs of a control. The symbol defines the unit of change such as percentage or time in ms or sec.



Expand Modules

As we have seen before, **patches** are made of various **modules** in which we can connect with wires.

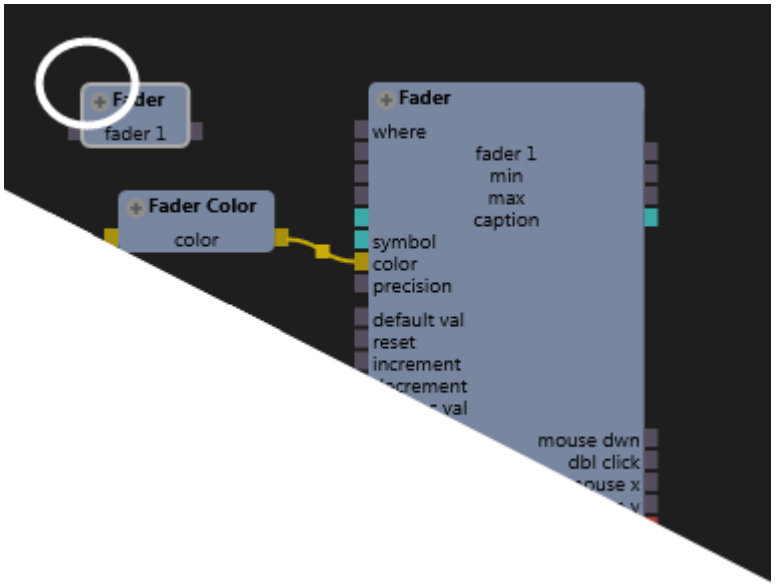
Generally a **module** contains a limited number of **inlets** and **outlets** which are predefined.

Some of these parameters cannot be directly connected within the **patch**.

For example by default, a fader is displayed in the **patch** as shown below:

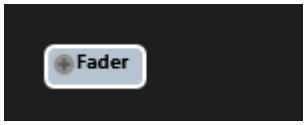
The module only displays one **inlet**/**outlet** which correspond to the fader value.

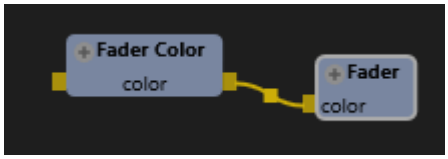
In some cases it can be useful to have total access to all available parameters of the fader. As an example: To change the color in real-time. Click on the expand button as shown below:



Now the fader **module** will display all of the available parameters so you can connect all **inlet**s/**outlets.** If you want, you can make complex or absurd **patches** like changing the size of a list box to the rate of the tempo!

Once a **module** is expanded in your **patch**, or even if it was too big to begin with, you can minimize it again. You have the choice to hide the **inlet**/**outlet** or just display the connected ones. As shown below your patch editing options allow you to manage your design efficiently.



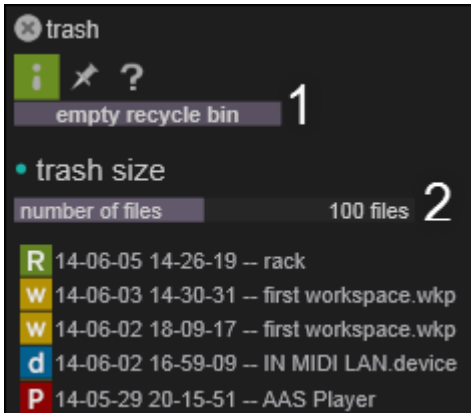


16. General Concepts

Using the Trash Bin

The main menu provides a trash icon. We can drop a **patch**, a **rack**, or a **browser** element directly on top of this icon to delete it.

A Left-Click on this trash icon will open the window. You are able to restore the contents if needed (with a simple Drag-and-Drop). Note that you will find the old versions of your **rack**, **patch**, and **workspaces** here as well.



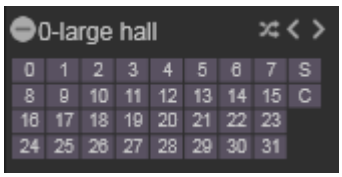
You also have the ability to empty the trash bin (1) and set its maximum capacity (number of files) (2).

The Toolbar

Above the **patches** and in some **modules** you can find some controls available in the header section. This portion of the header is called the **toolbar.**

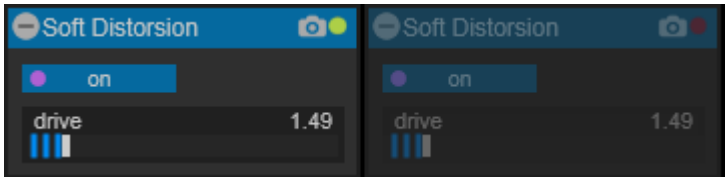
Used to Expand/Reduce the **patch.**

Displays the **preset panel.**

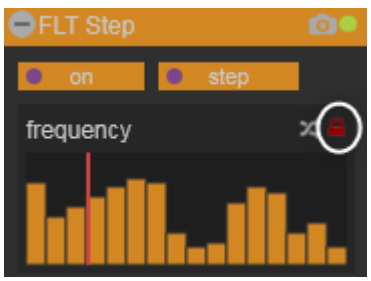


Open a settings pop up for this **patch.** Such as we have seen in our previous examples for the **normal sampler**:

On/Off: Activate/Inactivate the **patch**. The **patch** will be darker when off. This will also act like a *bypass* for this **patch**.



Lock/Unlock. Prevents changes when locked.



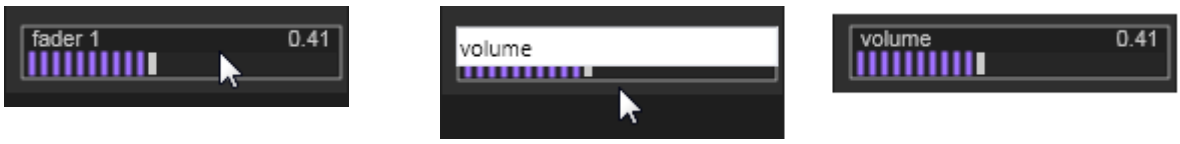
Other Concepts

Changing the Colors of an Object

To change the color of an object select it (it will be surrounded by a gray line) and Click on a color within the **quick palette.**

Rename an Object

Use the shortcut `[ALT + CLICK]` to change the caption of an object, **patch**, or **rack.** Here we are changing the fader name from *fader1* to *volume*.

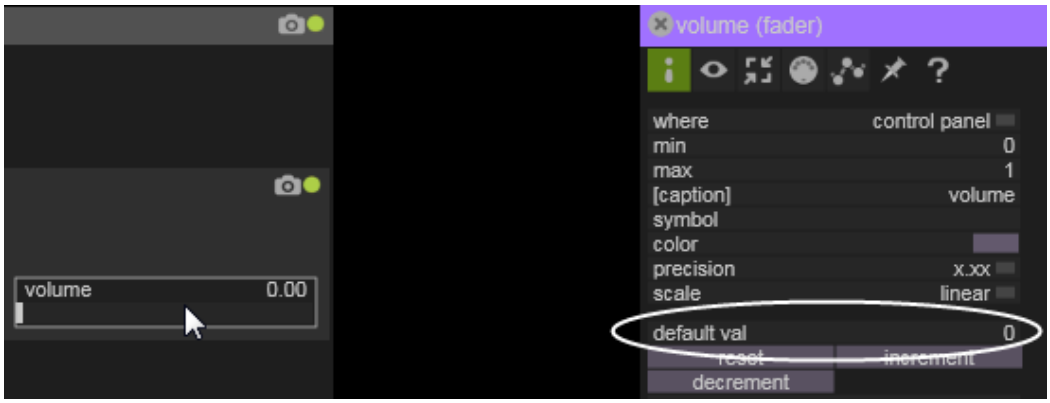


Edit a Value (Double-Click)

Double-Click on a value to enter a precise value using the keyboard.

Reset a Value Ctrl+Click

The shortcut `[CTRL/CMD+CLICK]` will reset the current value of an object to the default value.

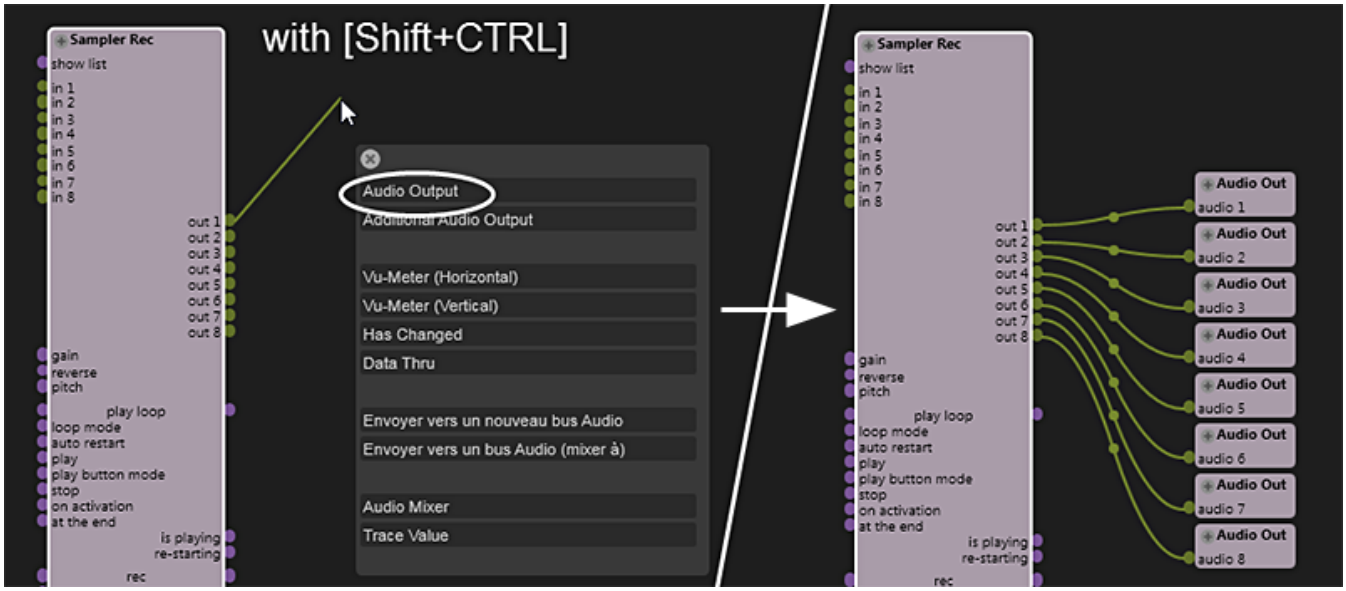


Multiple creation with the SHIFT+CTRL shortcut

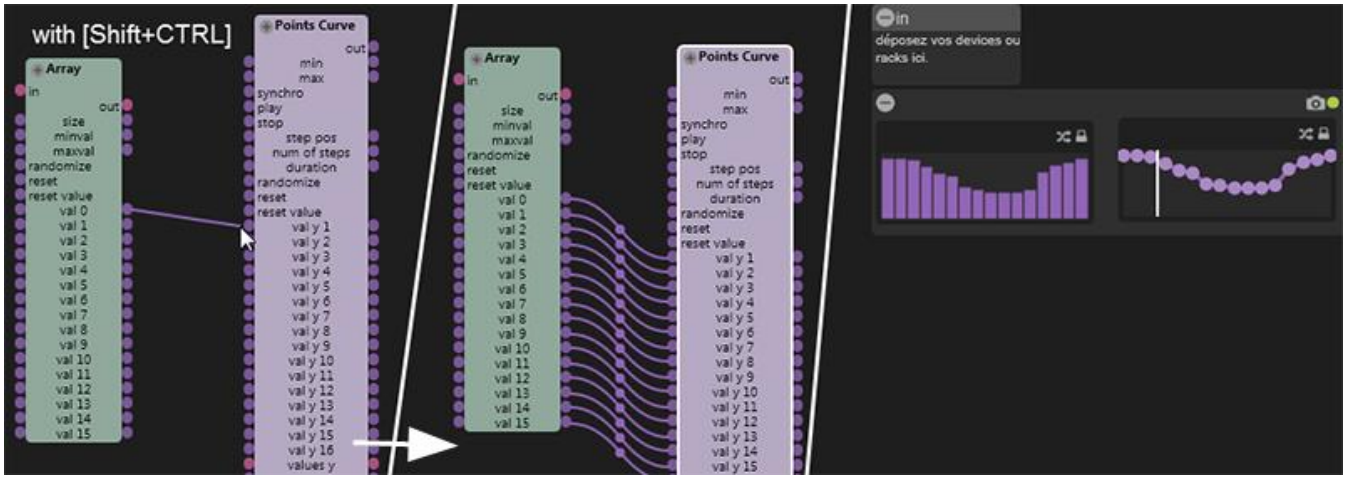
When patching, you'll sometimes need to create multiple outputs or link several inlets/outlets. Usine provide in this case a powerful shortcut with [SHIFT+CTRL]

Here are 2 examples:

You can automatically create multi-outs. Simply hold [SHIFT+CTRL] when creating your outlet, and this will place all the available outputs for your **module**. Here an example of a **sampler** with 8 audio outputs being created in this manner.



This method also works when you want link several outputs to inputs (from same family), Here, we link an array **module** to a point curve **module**. Simply press [SHIFT+CTRL] and maintain it when creating your outlets, this will link all the outputs available.



Zoom

Usine Hollyhock provides several ways to zoom both the interface or object individually.

The mouse wheel:
Click on the **header** of a **patch**, **container**, or **rack** and then use the mouse wheel to zoom it in/out.

Zoom out Zoom in

The zoom icon: Click on an object like a **patch** or **rack** and use this **knob** to zoom in/out the object. You can also assign a MIDI learn to this **knob**.

The restore icon in the main menu resets the zoom size factor to its default size:

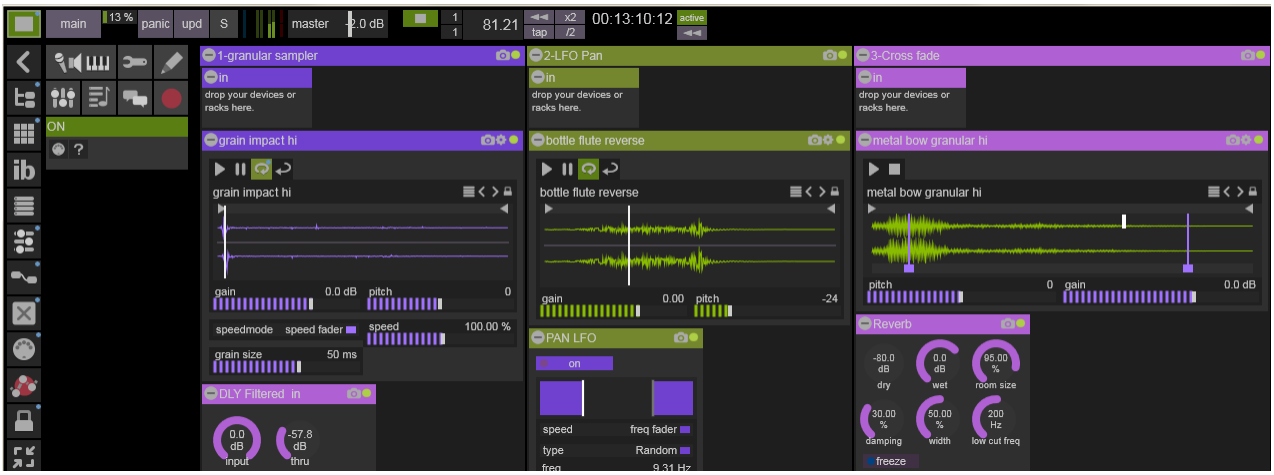
- Left-Click = resets the last clicked panel.
- Double-Click = resets all panels simultaneously.

17. Tips and Tools for Workspace Organization

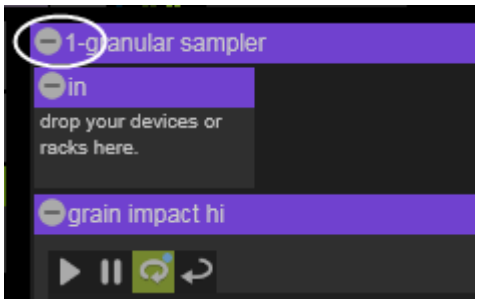
When you have several **racks** in a **workspace**, it's interesting to organize your work to provide better focus. Here are some useful tools and tips for organization.

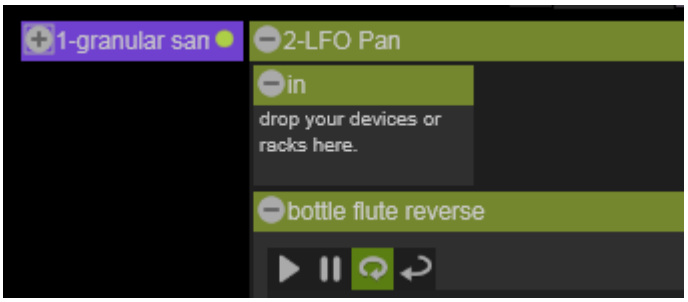
Minimize Several Racks

One of the first things you can do for better visibility of your **workspace** is to minimize unused **racks.**

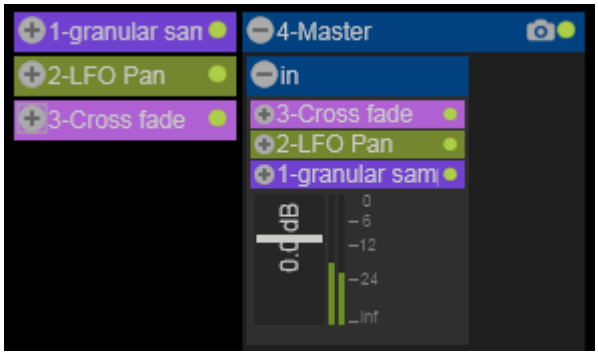


You can use the expand/un-expand icons on each **rack** to minimize them individually.



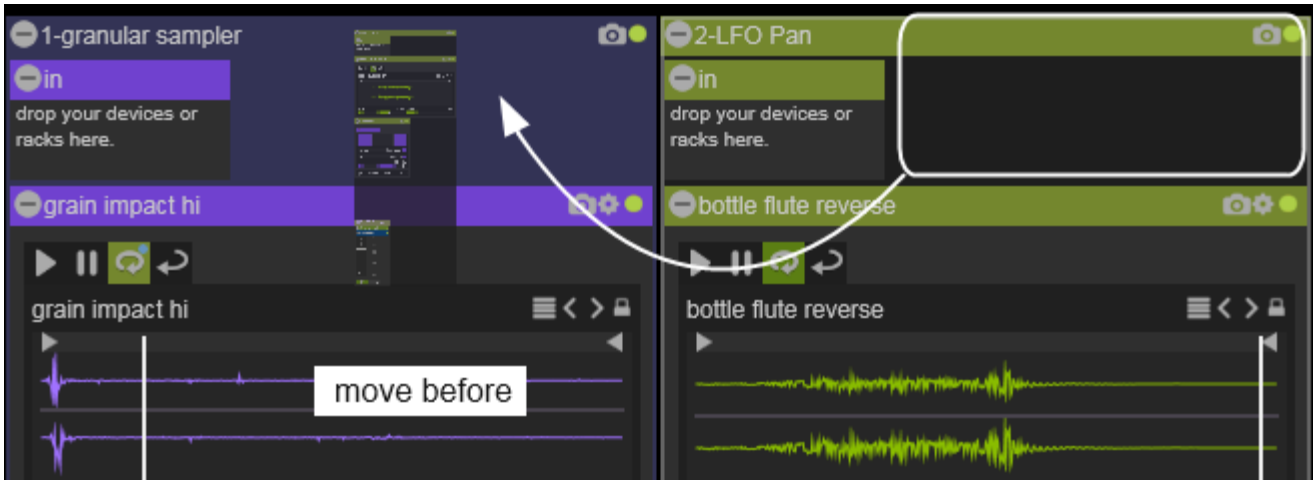


The second way is to use the `[UP/ DOWN ARROW]` on your keyboard. This will minimize all the **racks** except one and navigate between them.



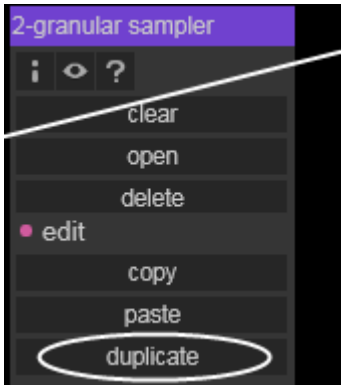
Change the Order of the Racks

You can also move each **rack** with a simple Drag-and-Drop. Click on the header or an empty place of a **rack** and move it over another one to take its place



Duplicate a Rack

To create some variations or to create a new **rack** from a template, it can be useful to duplicate a **rack**. This can be done with one Click in the **contextual menu** of a selected **rack**. The new **rack** will be added to the right of the existing **racks**.



Duplicate a Patch

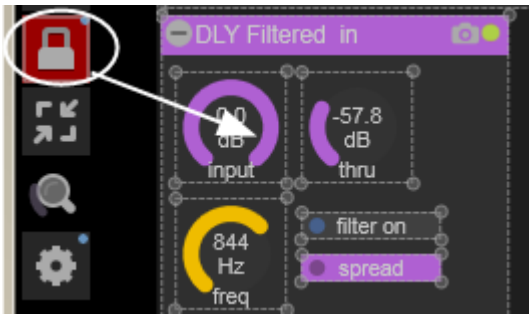
The best way to duplicate a patch is to drag and drop it onto another rack while holding down the [CTRL] key.

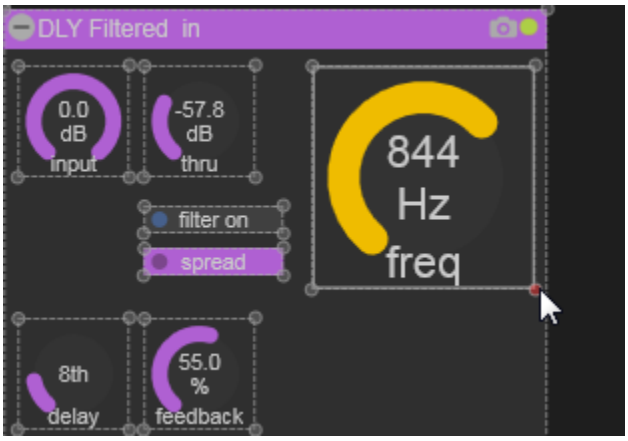
Change the size and position of an object

When using a touch screen it may become important to focus on organization and the visual layout of your **workspace**. Changing the size of the objects for touch screen applications helps distinguish the desired object from others, and improve playability of the target parameter.

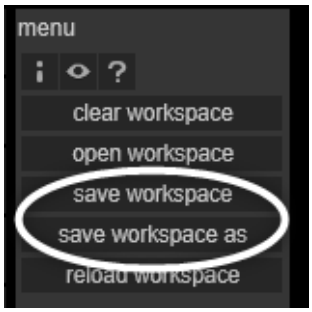
Unlock the **patch** with this icon.

Now, all objects can be moved and resized using their handles





Save Your Workspaces, Racks, and Patches



The **workspace** is the most used way to save your work with Usine.

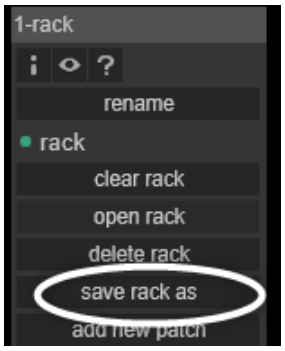
Here is what is saved within this file:

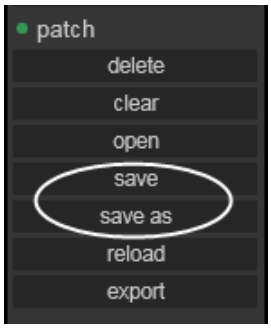
1) All the grid settings.
2) All the **patches** and **racks** are stored in a single file.
3) **Rack** Mixer input and output information (volumes, pan, etc.).
4) Synchronization information (tempo, bar length, etc.).

When you save a **workspace** or a **patch**, old versions are stored automatically in the Trash bin. So you can retrieve old versions by Clicking on the trash icon.

Save a Rack or a Patch

It is good practice to save a **rack** or a **patch** you use regularly. Once these have been added to your personal library, they can be reused in subsequent designs. Once selected Click on their respective *save* or *save as* button in the **contextual menu.**





If you want to share a **patch** or a **workspace** with someone else, you can also use the *export* command within the **contextual menu**.

The export functions saves the **Workspace** or **patch** normally, but also exports all the Waves, MIDI files used in the Sampler, and the Piano roll **modules**. It creates a supplementary folder in the same directory. This folder contains the Wave and MIDI files.

To distribute this exported **workspace** or **patch** (for example in the Add-ons library), just create an archive (zip) with the supplementary folder and all created **patches** or **workspace** files that are associated.

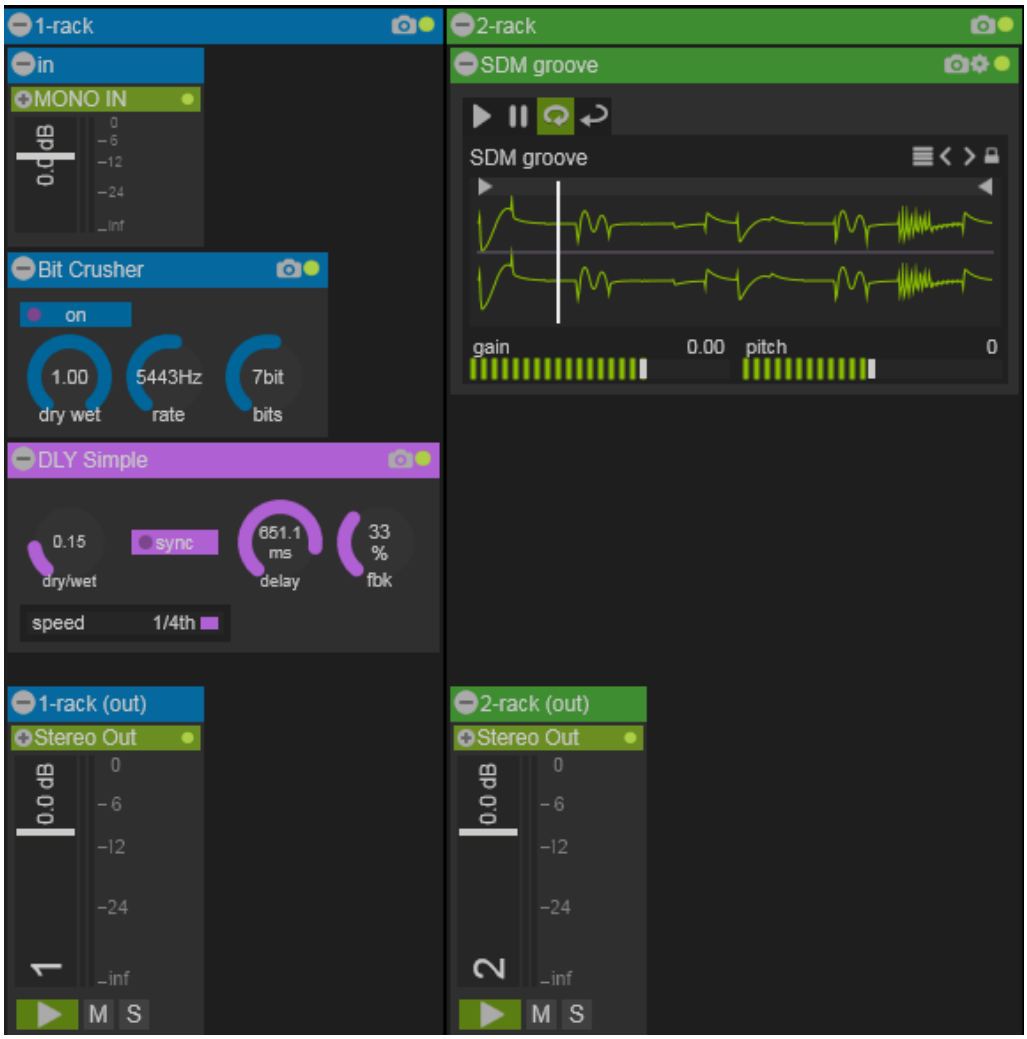
18. Direct to Disk

You can record your performances and concerts directly onto the hard disk of your computer with the **Direct to Disk**. This functionality turns Usine into a powerful real-time audio recorder.

The recording is made in a background process with a minimum impact (in CPU charge terms) to your current live session.

Example

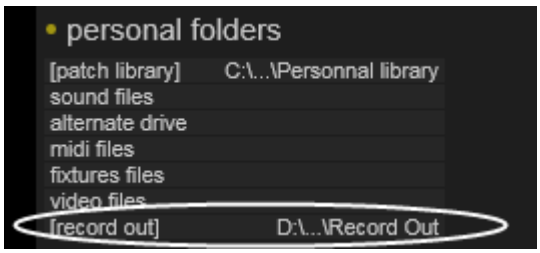
For this example we have a **workspace** consisting of two **racks**. The first one has a mono audio input **device**, some FX's **patches,** and a stereo output. The second one is only composed of a sampler and the stereo output.



To be able to edit our recording later, such as the case in stems. We want to record:

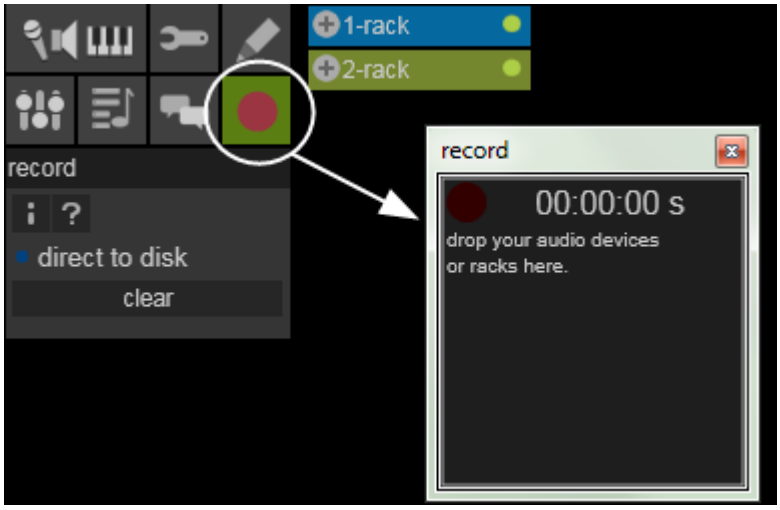
1) The mono input **device** alone (to keep the signal rough with no FX's).
2) Each **rack** on separate files for a post mixing process.
3) The main stereo out **device** as a witness file of our performance.

First open the global configuration tab of the **setup panel** and choose your default record folder in the *personal folders* zone.

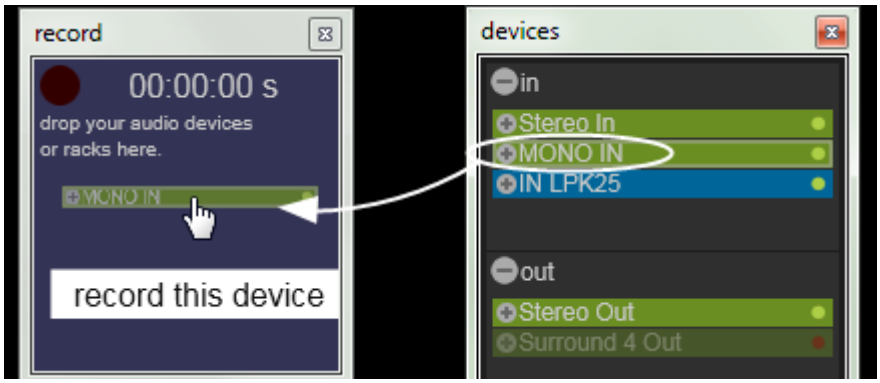


If no folder is chosen, the record folder will be Usine/Record out (Windows) or on the desktop (Mac OSX)

Now click on the **direct to disk** icon to open the panel.

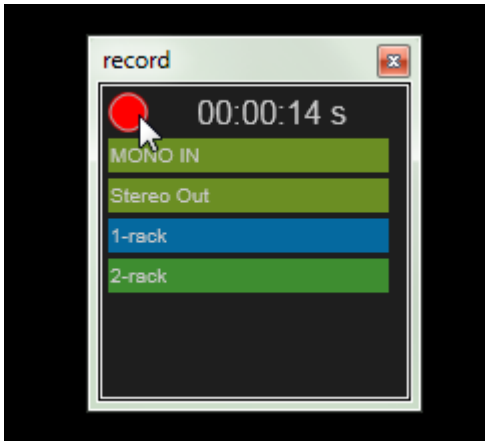


Open the **device panel** and Drag the Mono in **device** onto the **direct to disk panel**. Do the same for the stereo out **device.**



Now drag the two **racks** below the Audio **device** we put in the **direct to disk panel.**

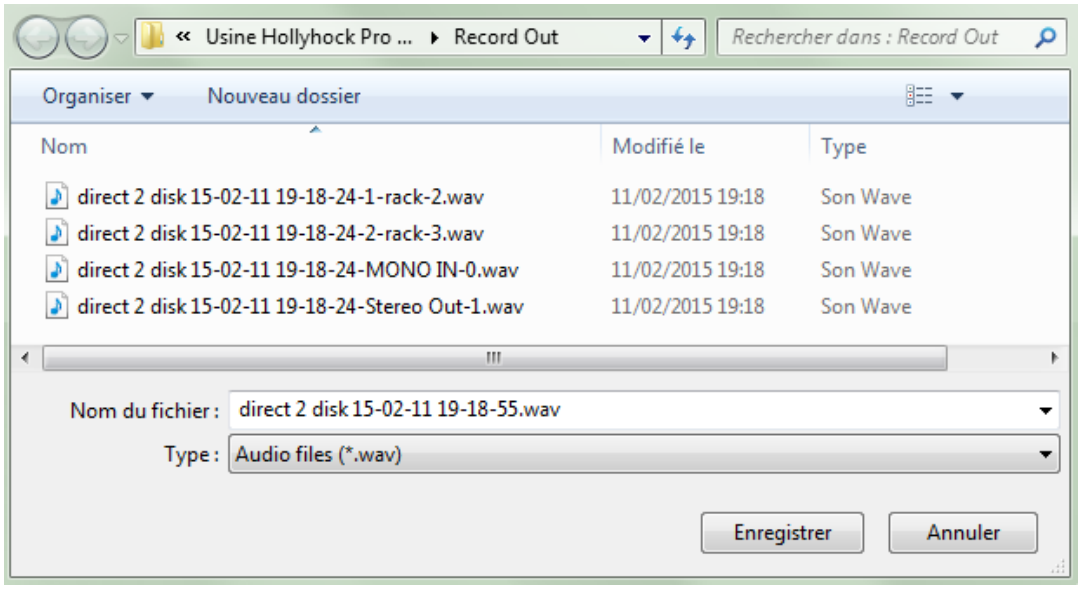
You can start your **workspace** and Click on the record **switch** on the **direct to disk panel.**



To stop the record, click the switch again to deactivate.

A query window will open in order to choose the path and a name for your file. You can cancel the process in the query window if you decide not to keep the performance take.

Date, hour, and name of the **racks** or **devices** are automatically added to the filename:


Usine Hollyhock Pro ... ▸ Record Out
Rechercher dans : Record Out
Organiser
Nouveau dossier
Nom
Modifié le
Type
direct 2 disk 15-02-11 19-18-24-1-rack-2.wav 11/02/2015 19:18 Son Wave
direct 2 disk 15-02-11 19-18-24-2-rack-3.wav 11/02/2015 19:18 Son Wave
direct 2 disk 15-02-11 19-18-24-MONO IN-0.wav 11/02/2015 19:18 Son Wave
direct 2 disk 15-02-11 19-18-24-Stereo Out-1.wav 11/02/2015 19:18 Son Wave
Nom du fichier : direct 2 disk 15-02-11 19-18-55.wav
Type : Audio files (*.wav)
Enregistrer
Annuler

19. Plug-ins (VST/AU)

Setup

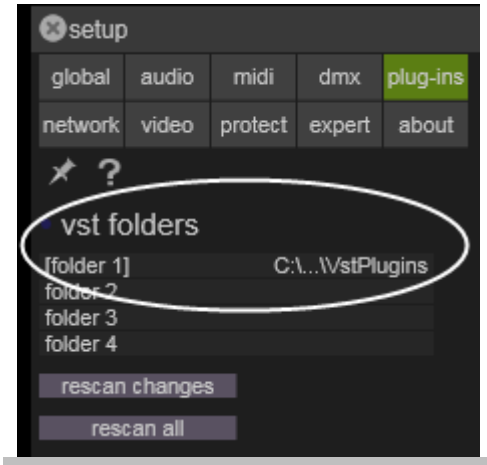
Usine Hollyhock can also host AU, VST, and VSTi plug-ins. These plug-ins are software that can be used in conjunction with Hollyhock **patches** to add 3rd party synthesizer instruments and audio/MIDI effects within your performance.

Installing Plug-ins

You can create personal folder to install your plug-ins to, or use the default locations specified by the individual plug-in installers.

On Microsoft Windows the default VST Plug-ins folder is generally *C:\Program Files\VSTPlugIns.* On a Macintosh folders are located at */Library/Audio/Plug-Ins/*.

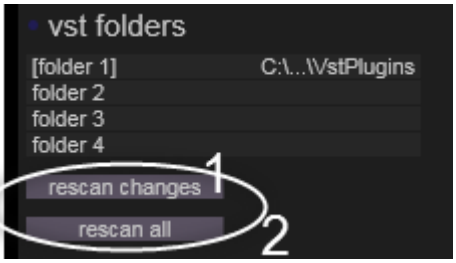
To manage these varying configurations, you can specify up to 4 different folders within the **setup panel/**plug-ins tab:



VST folder locations are only related to Windows VST files. AU (MACOSX) plugin locations must be located at /Library/Audio/Plug-Ins/.

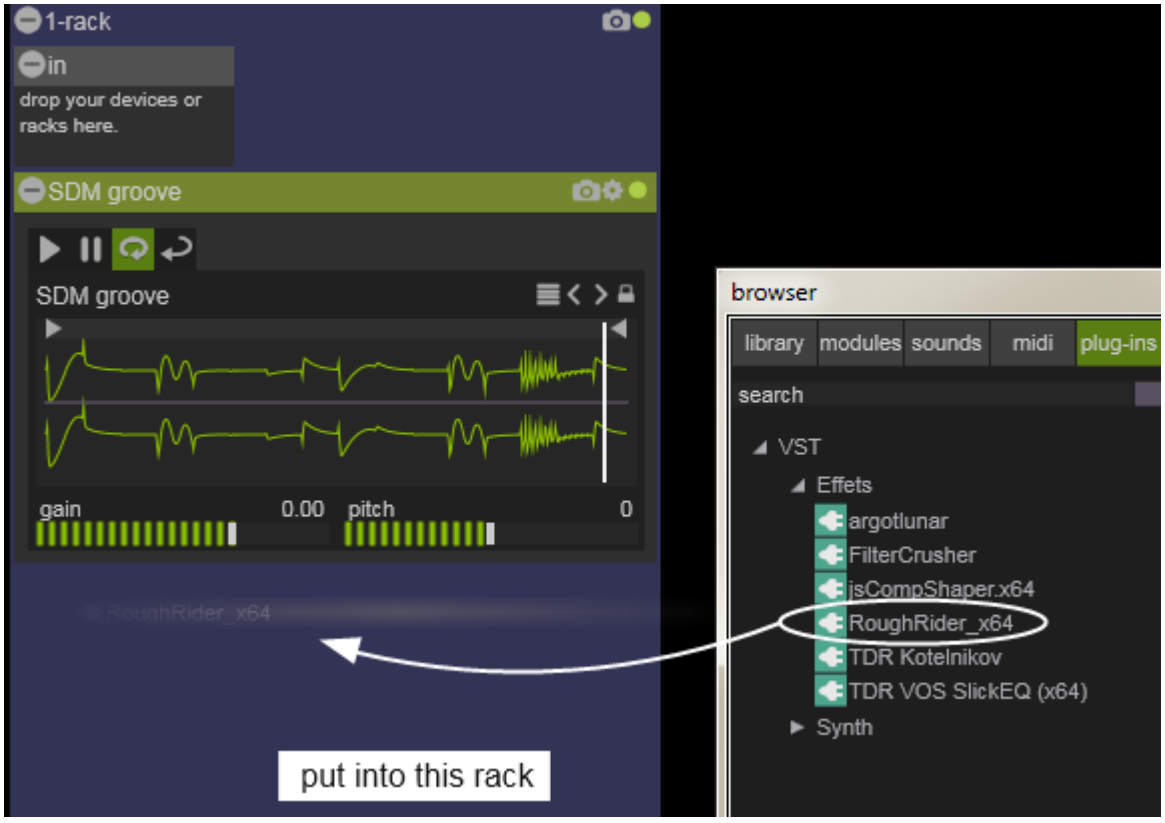
If you change this folder or install a new plug-in while Usine is running, you can update the Plug-in folder without having to restart the program. To update the configuration of plug-ins press the *rescan change* button. This function scans only newly added plug-ins.

The *rescan all* button is used to start a full scan of your folders, or when you have added a new version of a plug-in that was previously not supported. This scan will reset and completely rescan the entire plug-in folders specified.

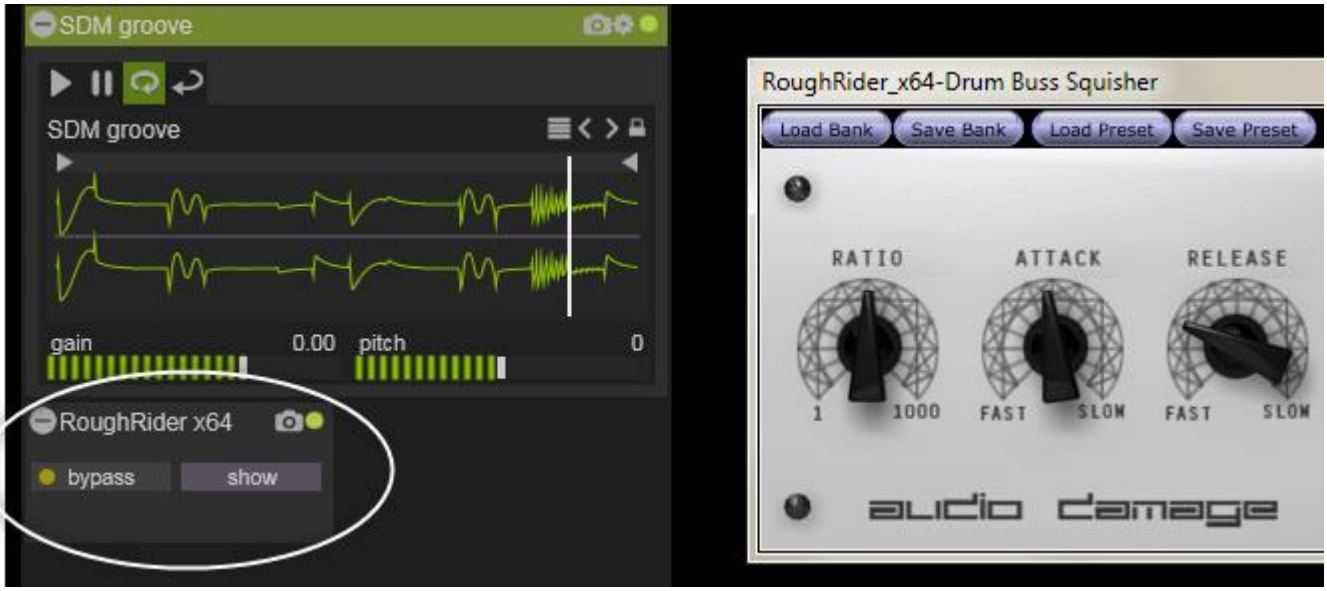


How to Use an Audio FX Plug-in

Setup a **normal sampler** as shown below. Open the **browser** and in the plug-in tab, drag an FX plug-in below the sampler:

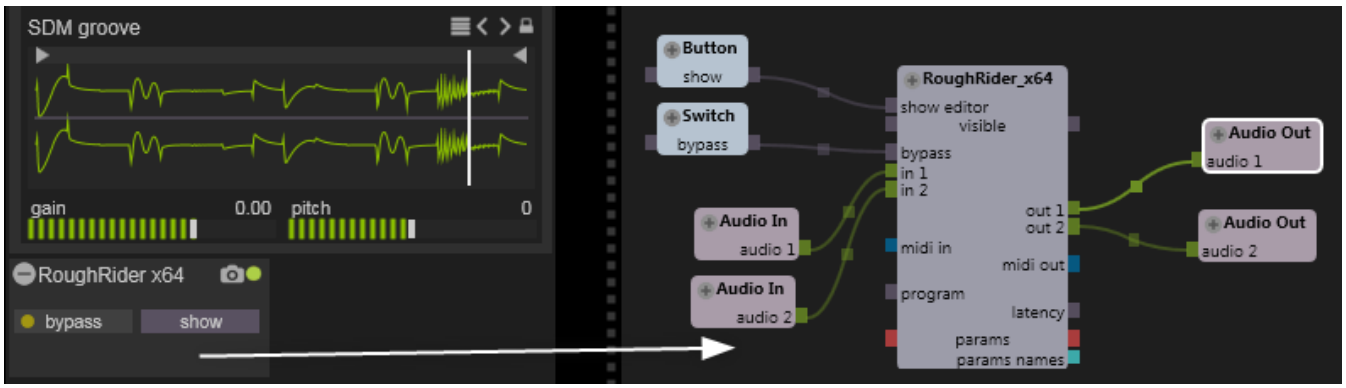


Usine will automatically create a **patch** with only two controls: a *bypass* **switch** and a *show* **button** to display/hide the plug in interface:



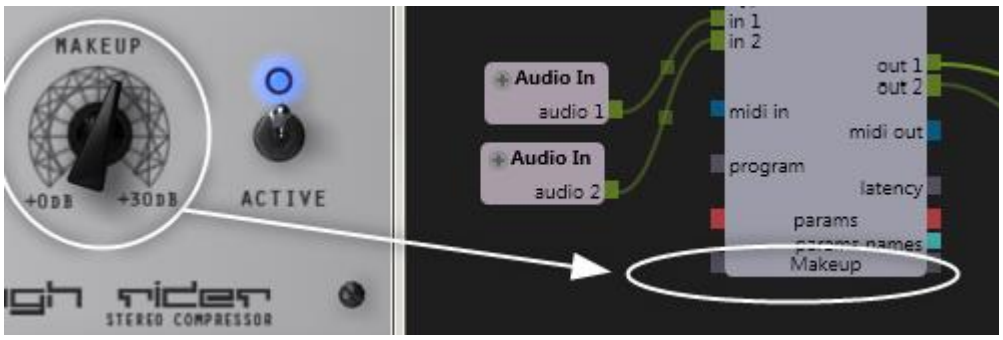
Here the plug-in used is the free compressor Rough Rider from audio damage.

If you Double-Click on this new **patch**, you will see that Usine has created the two audio inputs and outputs needed for this plug-in:

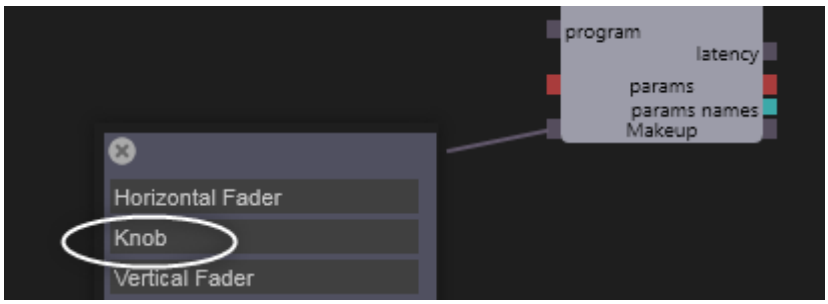


Adding Controls to a Plug-in

If you want add some control objects to your plug-in, for example if this one does not provide MIDI learn features: Move the knob or **fader** directly on the plug-in, this will create a new **inlet/outlet** that will now be available in the **patch editor** window.



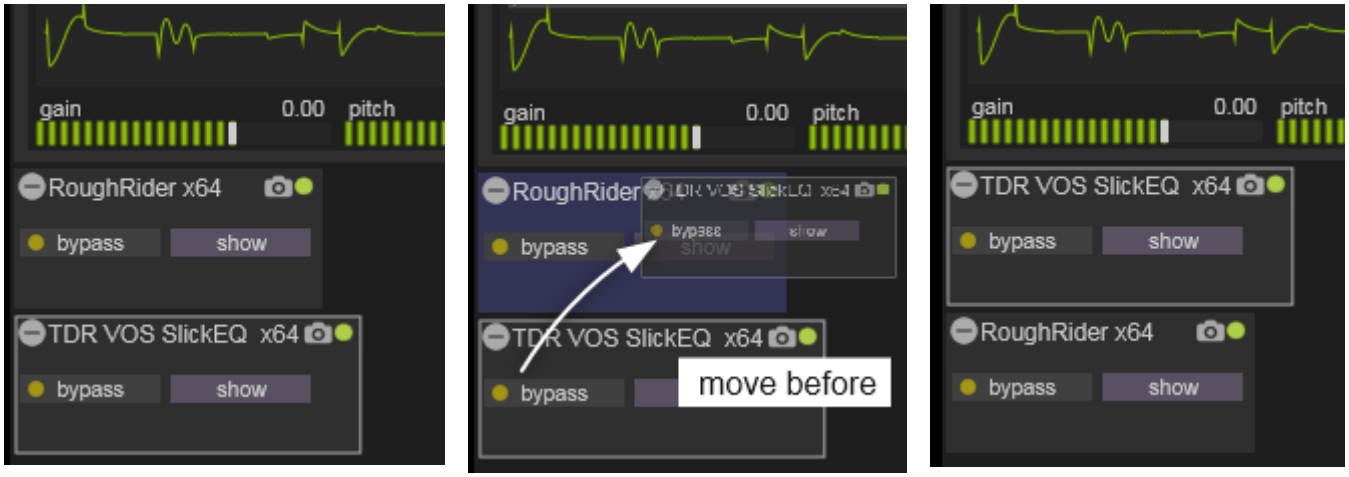
Drag a wire from this **inlet** and drop the wire onto an empty space. In the pop up menu select a **knob.**



In the **control panel** of your **patch** you now have a new **knob** where you can assign a MIDI or OSC learn easily (see MIDI learn chapter)

Changing the Plug-in Order

Note also that if you have several plug-ins in your **rack**, you can easily change their order. Simply drag one over another to change their place in the **rack**:



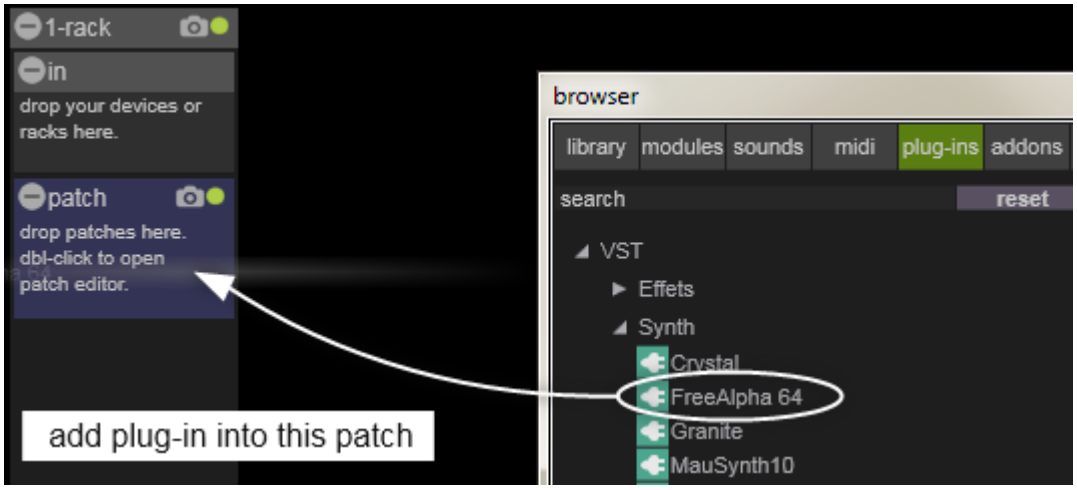
Using a VSTi Plug-in

For this exercise we decide to use a freeware plug-in named **Free Alpha** from **Linplug** (thanks a lot to the team) available as an **Au** and **VST** for MAC OS X and as **VST** for Windows.

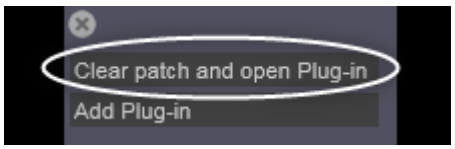
Download AU/VST MAC version here:
http://www.linplug.de/stock/alpha/FreeAlpha%20Installer%20330.dmg

Download VST Windows version here:
http:/www.linplug.de/stock/alpha/FreeAlpha%20Installer%20320.exe

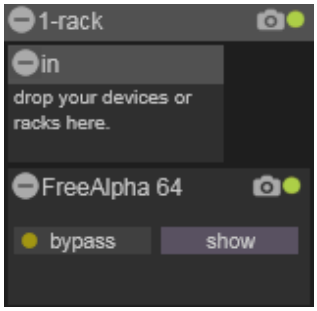
You can Drag-and-Drop a synthesizer plug-in in the same manner as a VST.



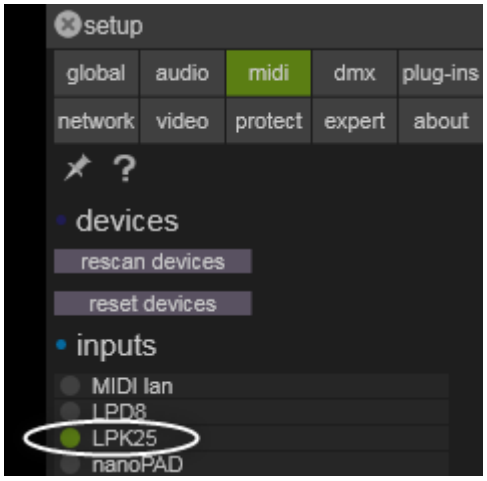
A pop up window will ask you to confirm you want overwrite the current **patch**:


Clear patch and open Plug-in
Add Plug-in

Usine will create a similar **patch** to the FX one, with two controls: a *bypass* **switch** and a *show* **button** to display/hide the plug in interface:

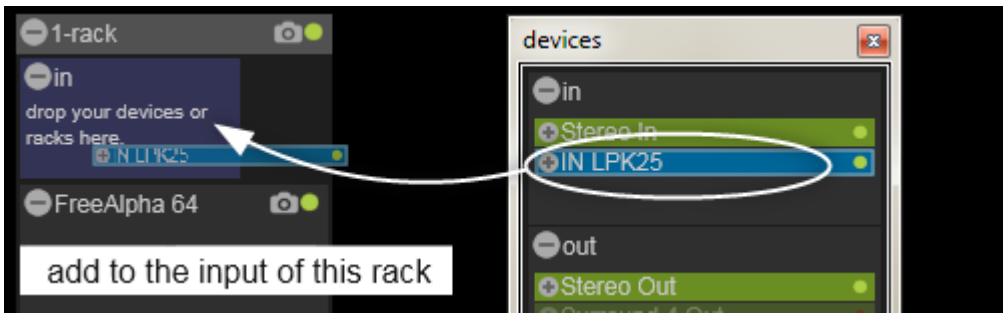


To send MIDI notes and messages to this plug-in we can use an external MIDI keyboard. Be sure it is activated in the setup/Midi tab (you can check the Midi setup chapter if needed)



Open the **Devices panel** by selecting this icon.

Drag-and-Drop your MIDI keyboard onto the **rack input**

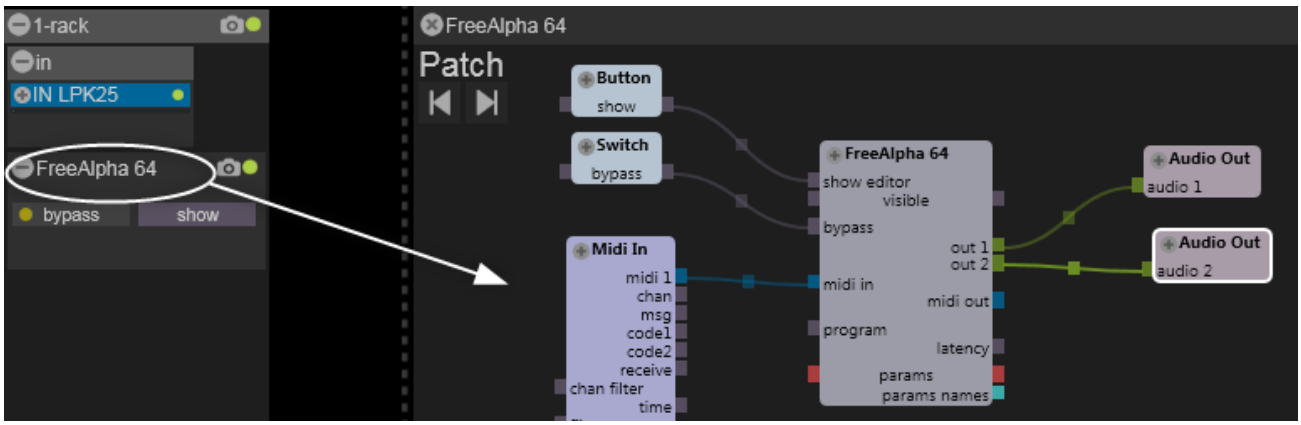


As we've seen with the MIDI sampler, If you play some notes on your MIDI keyboard, you can see the 3 indicators:

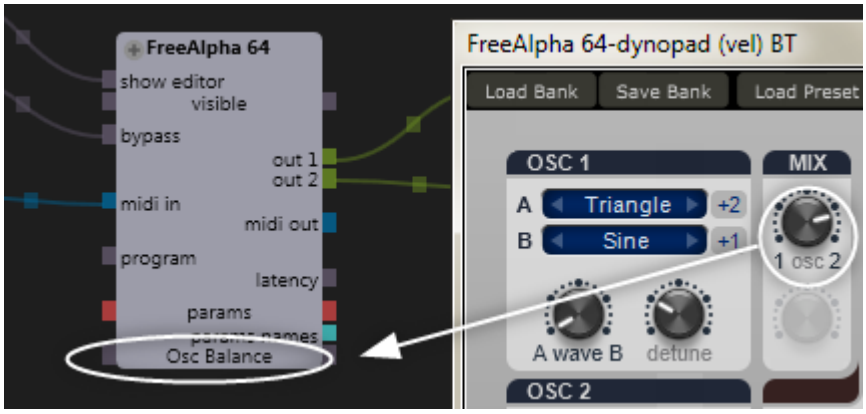
1. A MIDI led in the **master panel** which tells us the MIDI **device** sent MIDI messages.
2. A second one in the **rack** to confirm the MIDI enters this **rack**.
3. The last one at the end of this **rack** chain indicates the audio level from the synthesizer.

Add a Random Module

To create variations to this sound you can add random values to the plug-in. Open the **patch** editor window with a Double-Click on the **control panel** of the **patch.**

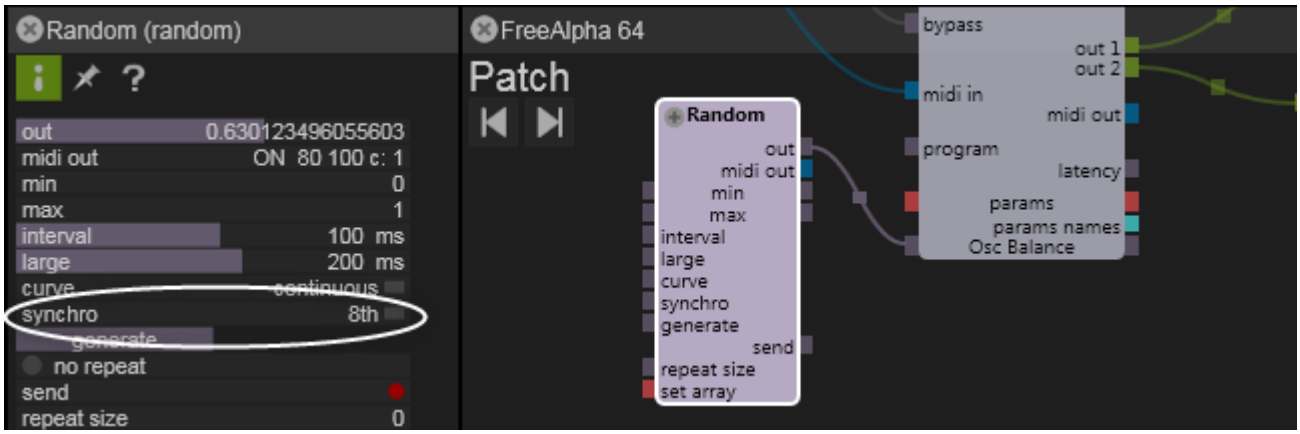


Move the Oscillator mixer on the plug-in to display the corresponding **inlet.**



Drag a wire from this **inlet** and select the *random data* **module** in the pop up window.

Right-Click on the random data **module** to display its **settings panel** and set, for example, the synchronization value to 8th.



Select a preset on the synthesizer with different oscillators like the preset named ***Dynopad*** to experience interesting results.

20. Automation Curves

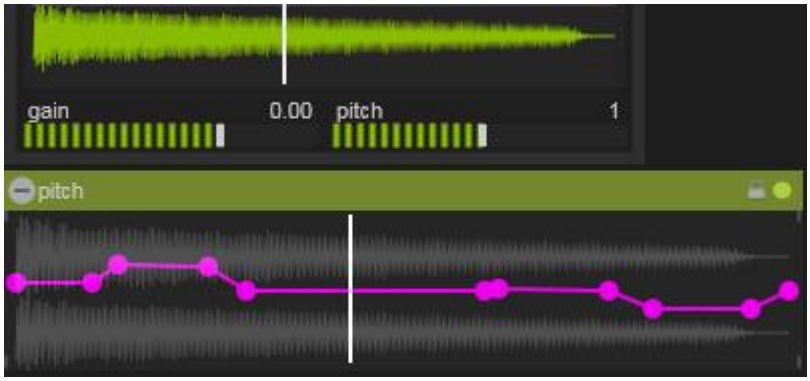
This function allows us to record the movement of any of the design objects, like the **knobs**, **faders**, **switches,** and more.

Click on the record icon in the main menu. It will turn red indicating it is recording.

Now move a **fader**, for example the pitch of a sampler:

Once done, turn OFF this record icon and the **fader** will repeat the movement.

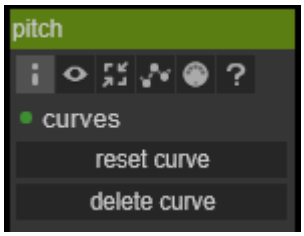
A new panel will be created in the **rack** with an automation curve:



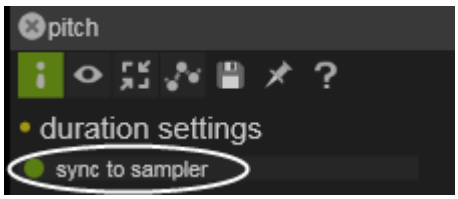
If we change our mind, we can record a new movement to overwrite the first one.

Editing the Curves

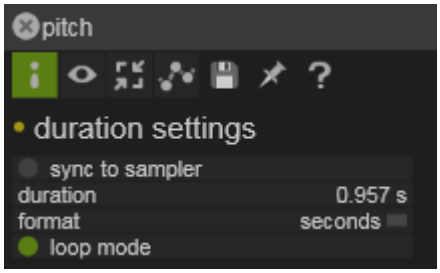
As all objects in Usine, a **curve panel** has its own **contextual menu** where you can reset or delete the curve:



In its **settings panel** we will find other options such as the ability to synchronize this curve to the sampler (by default).

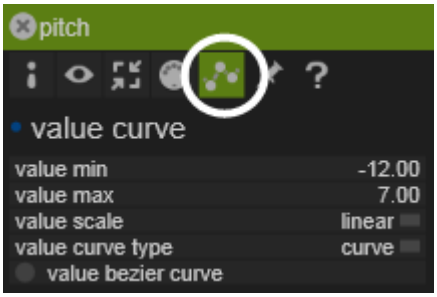


If you deactivate this option some new parameters appear to change the format and duration for this curve.

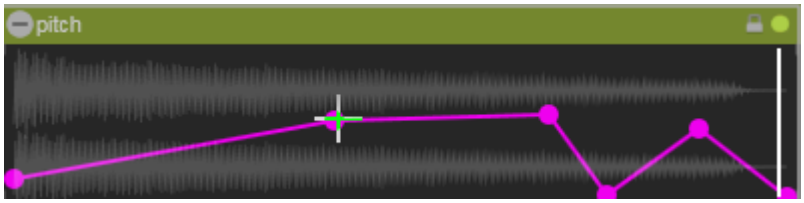


Note that the waveform will be displayed behind the curve only when the option *sync to sampler* is active.

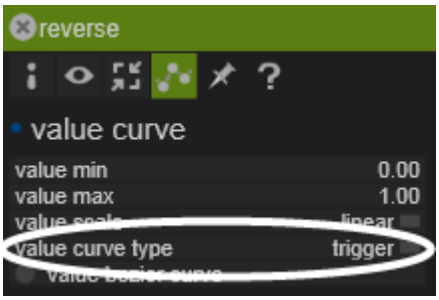
The curve tab allows you to adjust the minimum and maximum values , here we chose a value of -12 to 7 semitones:



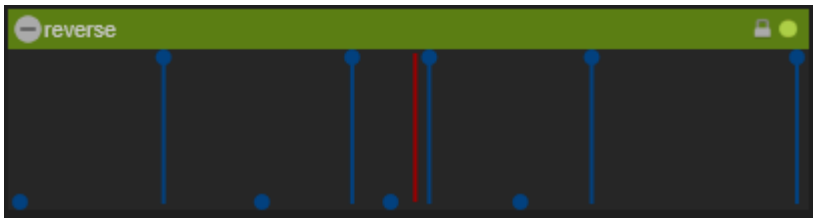
To create or delete a new point, Double-Click on a line or on an existing point.



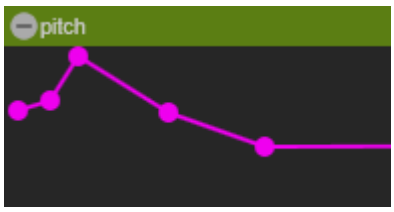
Another possible option is the type of curve used; here for example, we have created automation by Clicking repeatedly on the reverse **switch** of our sampler. For better readability of this curve, the *trigger* curve type will provide interesting results:



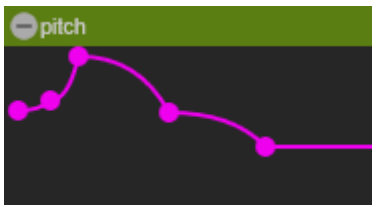
The trigger curve:



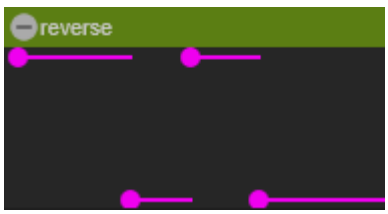
As a reference overview of the possible curve types:



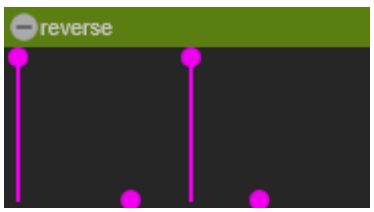
Curve



Curve with Bezier option



Step



Trigger

21. Settings Panel

Overview of the Main Tabs

The **settings panel** is an important panel which contains several tabs for general properties, design, and remote settings. This panel is contextual and will be different according to the selected object. Here is an overview of some settings you can find within.

To hide/show the panel select the icon shown above. Once opened, a Left-Click on any object will display the corresponding **settings panel.**

The second way to access the panel is to Right-Click on any object (panels, **rack**, **patch**). Again, once opened you can now use a single Left-Click on any other object to display its **settings panel**.

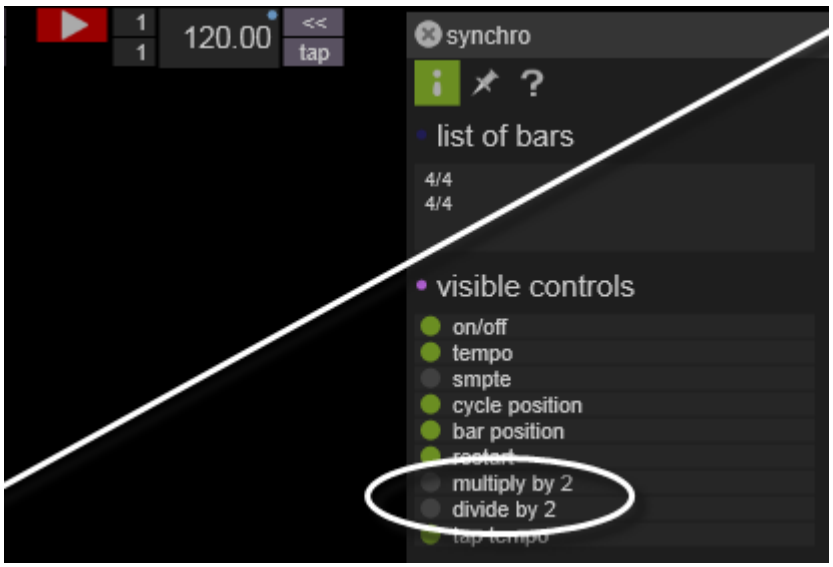
If you want lock the **settings panel** to an object, for example to study a value when you change a parameter elsewhere, you can use the **pin icon**. If you Click on another object with the **pin icon** activated the current **settings panel** will stay opened.

The General Properties Tab

Depending of the selected object, this tab refers generally to visibility and value options.

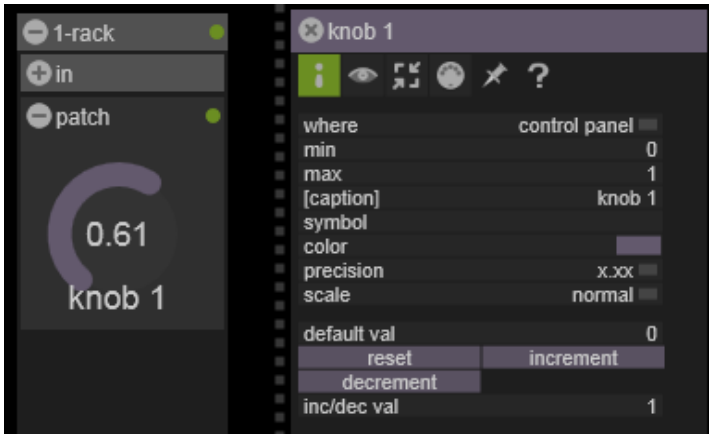
Panels

As an example with the **synchronization panel:** you can choose which elements are visible:



3 parameters are disabled to create a custom version of the **synchro panel**.

For controls objects like **faders,** **knobs,** and **button**, the properties tab contains settings to change caption, visibility, minimum/maximum values, and more.



With an (A x B) math **module** you can set its main values when working within the **patch editor window**. This allows direct setting of values such as constants when not wired.

The Design Tab

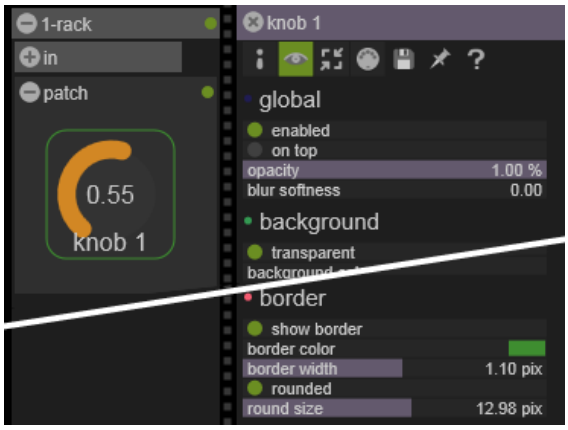
The design tab of the **settings panel** is the place to customize the visual properties of an object.

Here you can set all colors (background, captions, and borders), opacity, and rotation parameters for your objects.

The Size and Position Tab

Regarding the design of an object, a second tab is available and accessible using this icon. In this tab you can adjust the settings for size, rotation, and position of objects. This can be done in conjunction to unlocking the interface to view the size and positional values of the object within the design.

Shown is an example with a **knob** where the background is transparent, a green border has been added, and the border has been rounded.

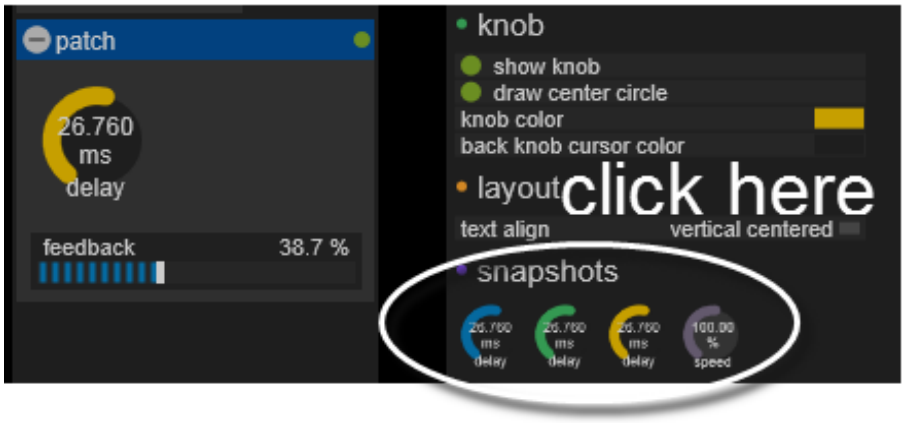


The Snapshots Icon

This icon is visible in the design tab.

When you have created a layout for an object you can save a **snapshot**. Click on this icon and enter a name to save this design. This snapshot will be saved and can be recalled later. The **snapshot** once saved, can be seen in the lower part of the design tab.

To modify the design of another object using the saved **snapshot,** select the object to be modified and then click the saved snapshot at the bottom of the design tab.



The Remote Tab

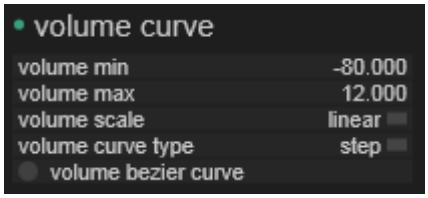
The remote tab is where you manage all the **MIDI, OSC ,** and **Key learn** as we have seen in the Midi learn chapter. Other parameters like **binds** and movement recording are also managed here.

The Curves Tab

This icon is contextual and will have different settings depending on the selected object:

Sampler

A sampler has five editable curves: volume, pitch, pan and two user curves. This tab provides access to edit the minimum / maximum values.

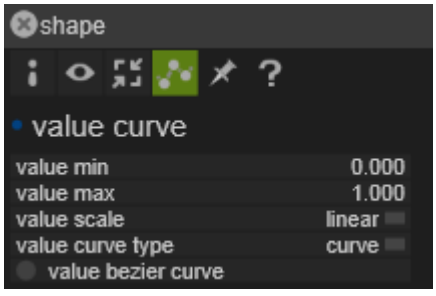


Control Panel Objects

You can specify an object to always record on Click by enabling the *auto record on click* option, rather than pressing the record icon of the main menu.

Pre-Recorded Curves

Once you have created automation curves you can edit several values and parameters similar to the sampler examples shown.



22. The Master Synchronization Panel

Beside the main features we have seen in the master synchronization description, there are some others tools you will find within the **main synchronization panel.**

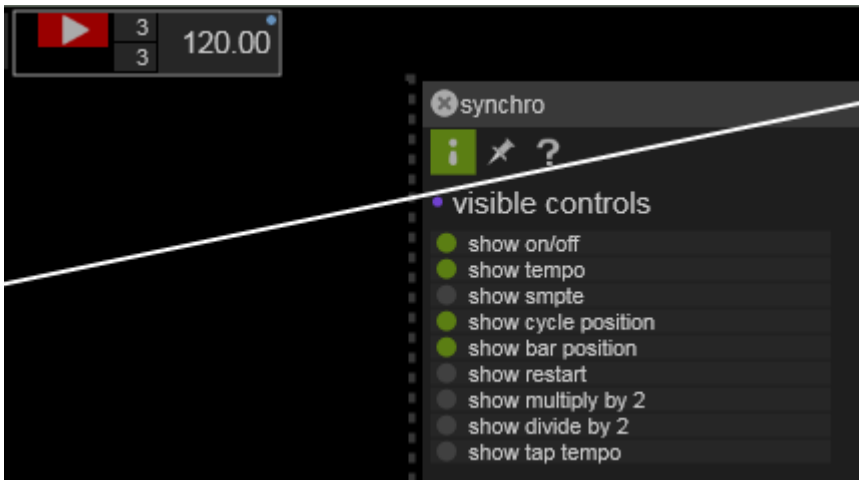
Create a Customized Synchronization Panel

Sometimes it can be useful to personalize the **master synchronization panel** to suit your needs. For example if you don't use SMPTE or never use the tempo x2 or tempo/2 **buttons.**

Example of a mini panel in comparison to the standard panel.

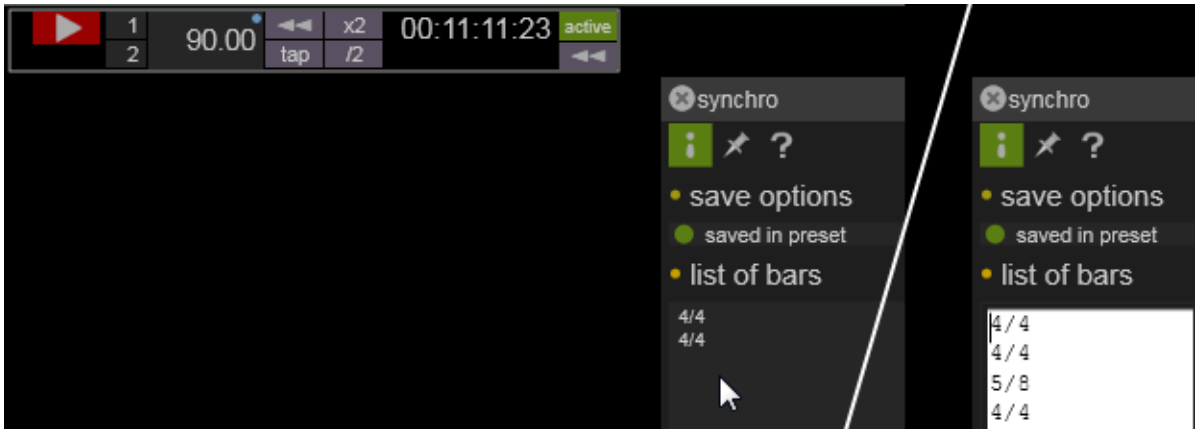
To select the elements you want be displayed use a Right-Click on the **synchronization panel** to open its **settings panel.** You will find the *visible controls* zone where you can select which elements will be visible.

Here we decided to keep only the main ON/OFF **switch**, the tempo **fader,** and the two indicators for time signature:



Use of Several Time Signatures in a Workspace

In the settings panel you can also find another zone named list of bars. To edit this text panel Double-Click. This allows you to create a sequence of different time signatures you want to use for your **workspace.**



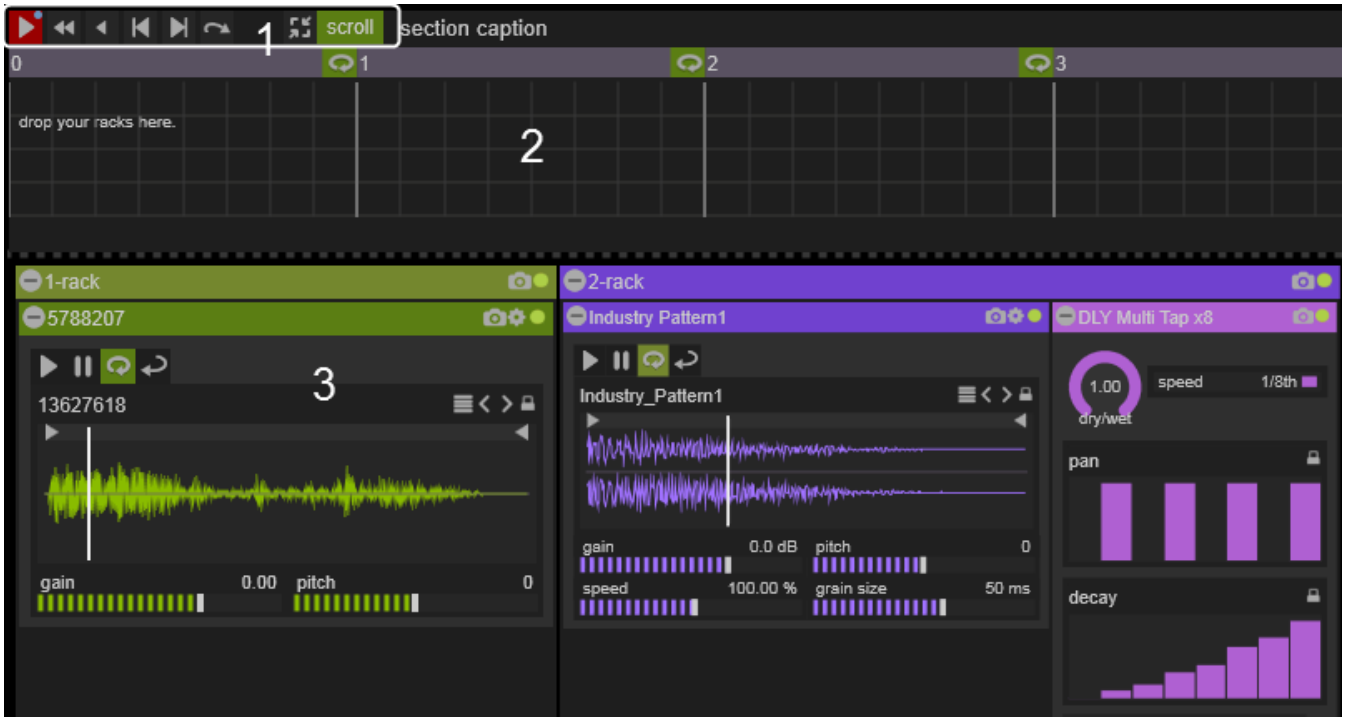
23. The Grid

We can consider the grid as a powerful sequencer for our **racks**, with the possibility to add automation curves in addition to each automation within.

First Grid Example

We will create a **workspace** for this example with two **racks**, first one with a sample player, and the second with a granular sampler and effect. Here we chose the *Audio FX/delays/DLY Multi x8*

Once the **workspace** is created, display the grid with this icon:

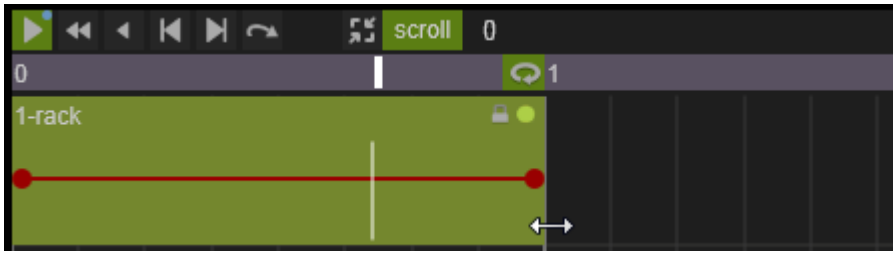


You will notice 3 zones available for this **Grid panel:**

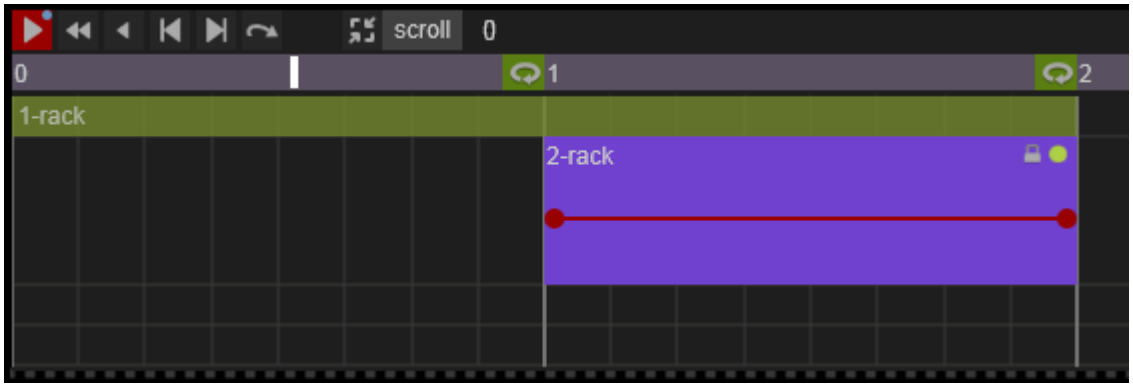
1. **The transport bar** with the main play commands that are detailed below.
2. **The grid zone** where you can drag your **racks** to sequence them horizontally.
3. **The racks** which become visible when activated in the sequence.

We'll start with dragging **rack** 1 to the first line and first section (column) of our grid. This part will be highlighted:

Once done, go over this new **grid element** and use the double arrow to extend it until the end of the second **section.**



Now drag **rack** 2 onto the second row / **section** 2

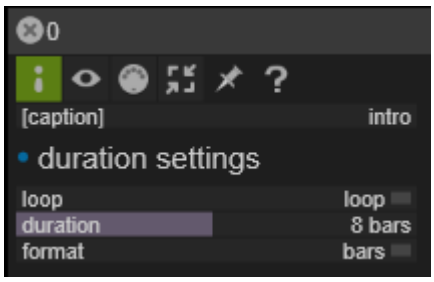


The Properties of a Section

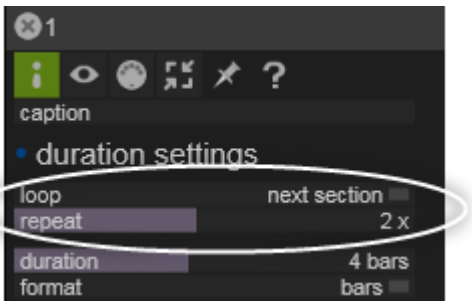
Now we will focus on the properties of our first **section**. For this, as any element of Usine, use the Right-Click on the top of our **section** to display its **settings panel /**properties tab.

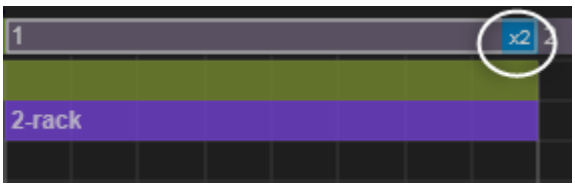
In this panel we can change the duration and choose a format of time (seconds, minutes, milliseconds, cycles, bar, or beat) for this section.

Here we will choose the bar as a unit and opt for a length of 8 bars. We can also take the opportunity to give a name (intro) to this **section** by Clicking next to the word *caption*.



Note that if you change the Loop mode to *next section*, a new repetition **fader** will appear, allowing you to repeat the **section** before moving on to the next one.

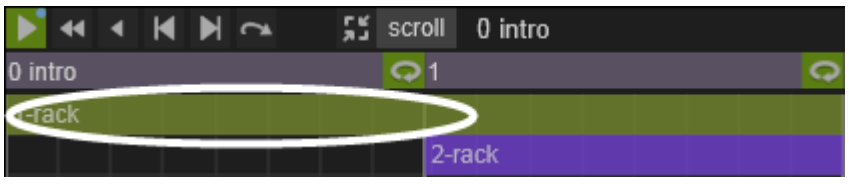




A new **button** will be displayed in the **section** to reflect the repetitions.

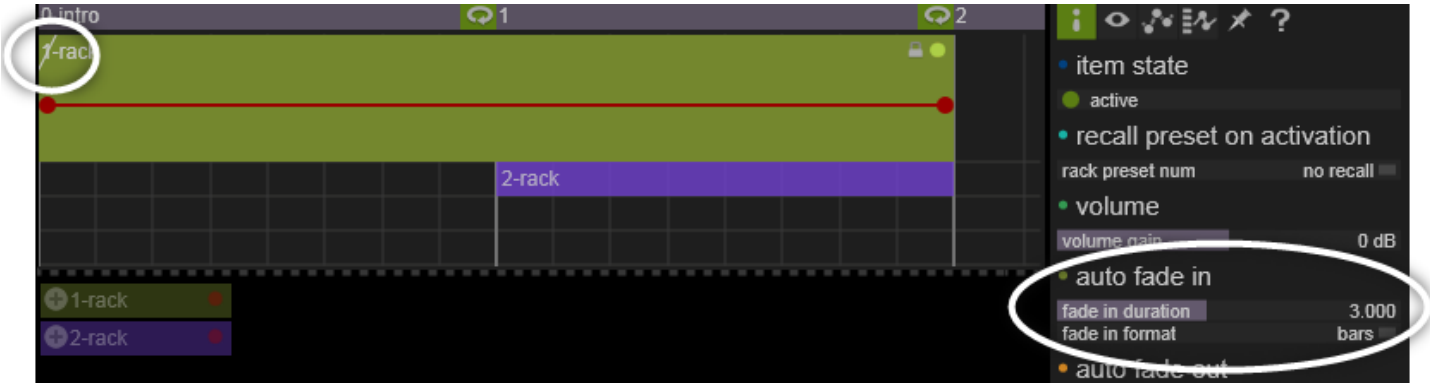
The Properties of a Grid Element

Right-Click on the **grid element** to display the **settings panel.**



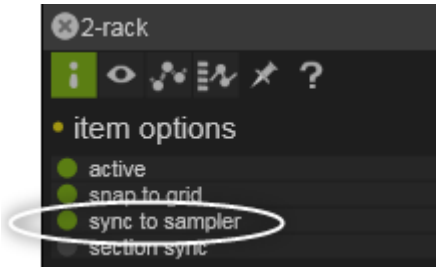
A Left-Click will enlarge this element and display, by default, the volume curve. But first, we will use another function to soften the beginning of our sequence, the **fade in** function.

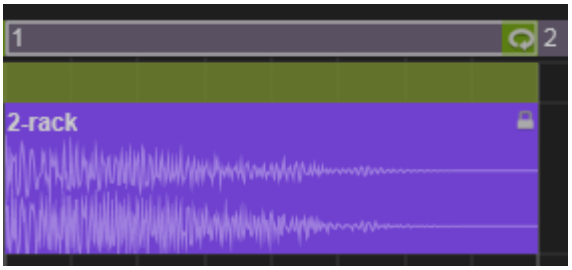
As for the section, we have several choices for the format; here we choose again bar and the value of 3 so our sequence begins with a fade of 3 bars.



Two other options are available for this grid element:

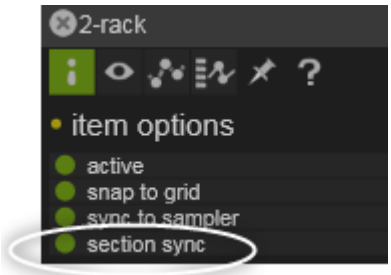
Sync to sampler: This will link the element to the synchronization of the related sampler, and will also display the waveform within the grid.

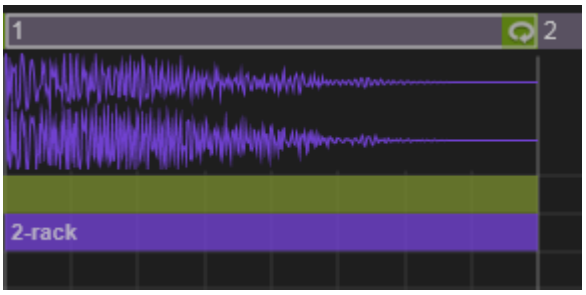




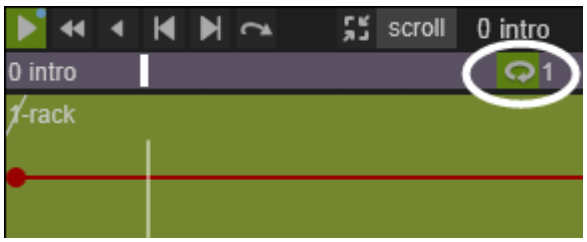
Section sync: This option synchronizes the entire section and will display the waveform above the grid elements, and under the section header. The waveform is visible even when the elements are minimized.

The section then becomes synchronized to the duration of the sampler.





Click the Play icon on the grid to start the sequence (we will notice that this also activates the main audio engine so we do not need to activate it beforehand). The first **section** is played and by default it is looped. We can change this with the loop icon:



This icon has three possible states; Click it to toggle between the choices:

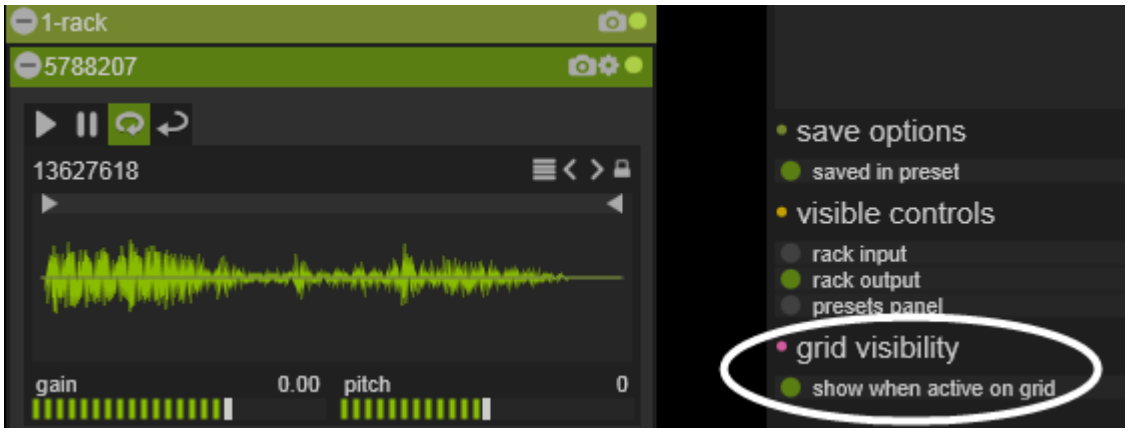
Play this **section** in loop mode.

Play the **section** once and put in break.

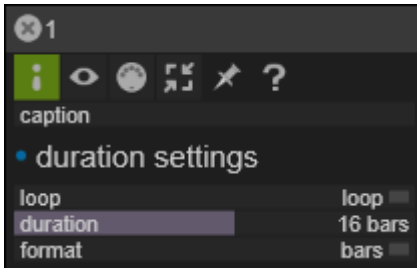
or Play the **section** and continue on to the next one. Or apply the selected repetition

To hear our second **section** we selected the continue icon: The playback continues past **section** 1, and goes until the end of **section** 2, where it has its own state icon.

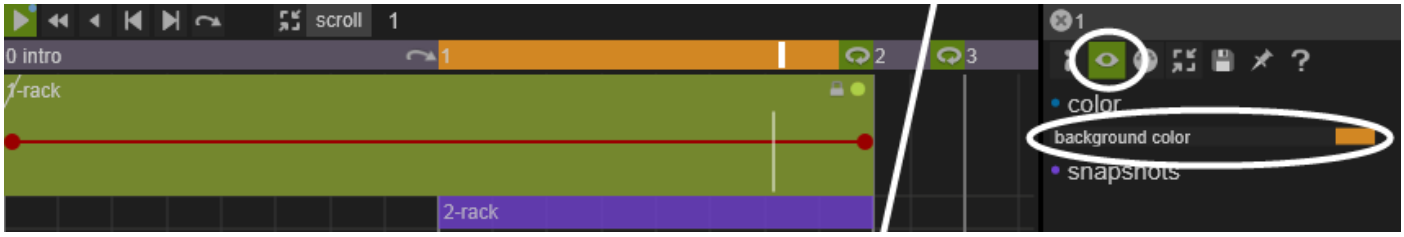
You will notice that when you play this sequence the **racks** are visible only when they are active in the sequence. The **rack** 1 is initially visible and then on **section** 2, the two **racks** are visible. This default setting can be changed in the **settings panel** of each **rack** with the option *show when active on grid*:



Now select **section** 2. We will change its length and its format. We keep bar for the format and choose 16 bars for the length.



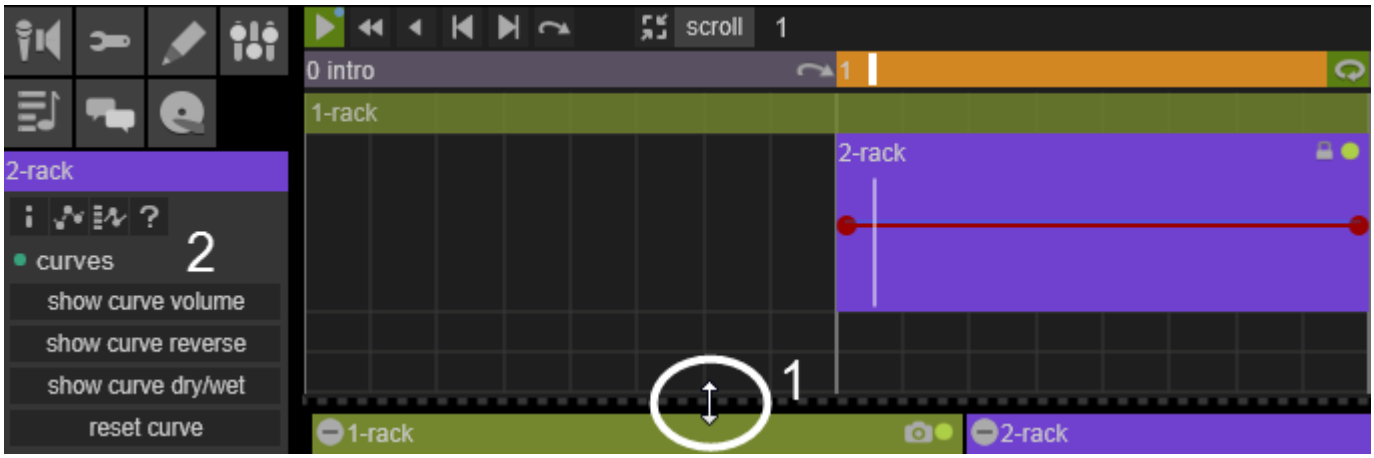
We can take the opportunity to change the color of this **section** in its **settings panel**/design tab to clarify our overview:



Now Click on **rack** 2 in the grid to select it (you will notice that **rack** 1 has resumed its normal size). We will use this new tab that lists all the parameters of a **rack** that can be automated using a curve:

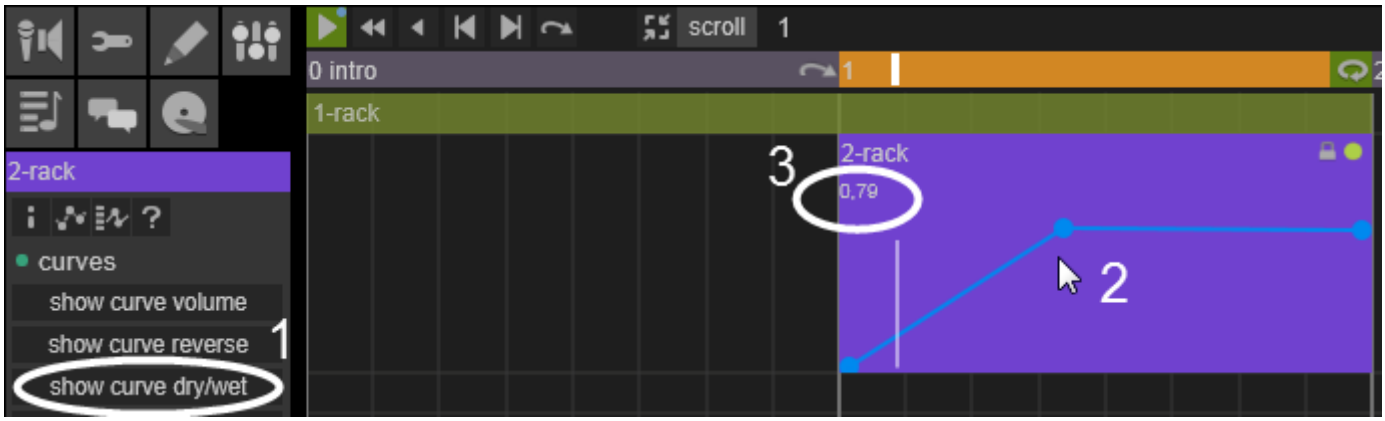
Here we have activated the curve of the sampler *reverse* and the setting *dry / wet* of the **patch** *DLY Multi tapx8.*

Once these curves are activated, we can expand a little up our **grid element** using the dotted line (1), we also see that the **buttons** corresponding to each curve were created in the **contextual menu** (2) (the volume curve, which is created by default and the two curves that we just created).



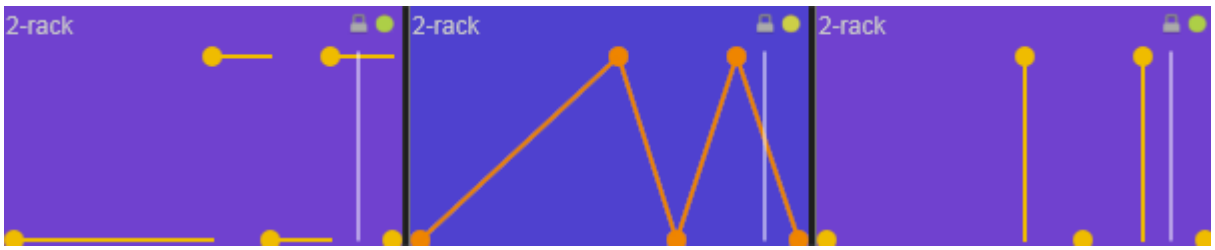
Select the curve dry / wet (1). The goal here is to create a progressive effect. Just Double-Click on the curve to create additional points (2). Another Double-Click on the point will delete it.

When you move a point the value is displayed in the upper left for precise control (3).



For the reverse curve of our sample we first change its type. We have a choice of 3 types of curves similar to what is available for recording automation.

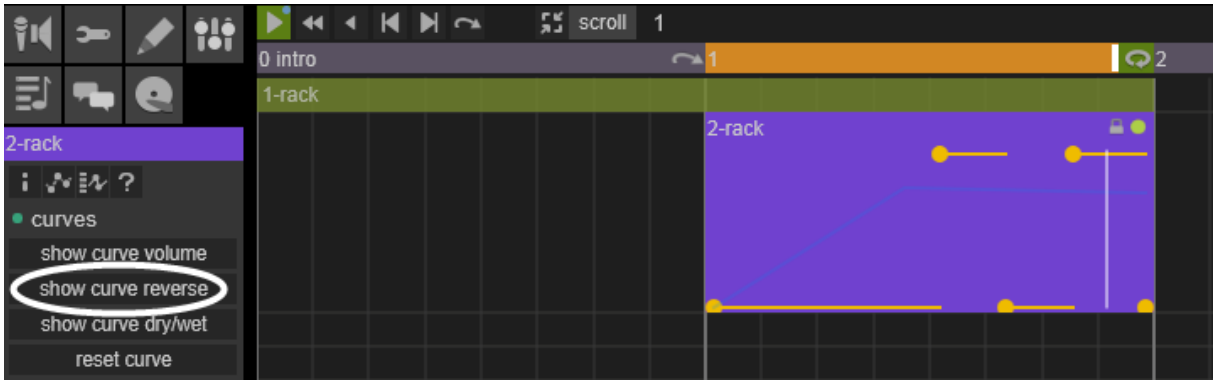
1. **Step**: Suitable for sequencing different values or toggling a switch on and off.
2. **Curve**: Suitable for creating progressive point to point values.
3. **Trigger**: Suitable for a trigger flow. (For example, a button).



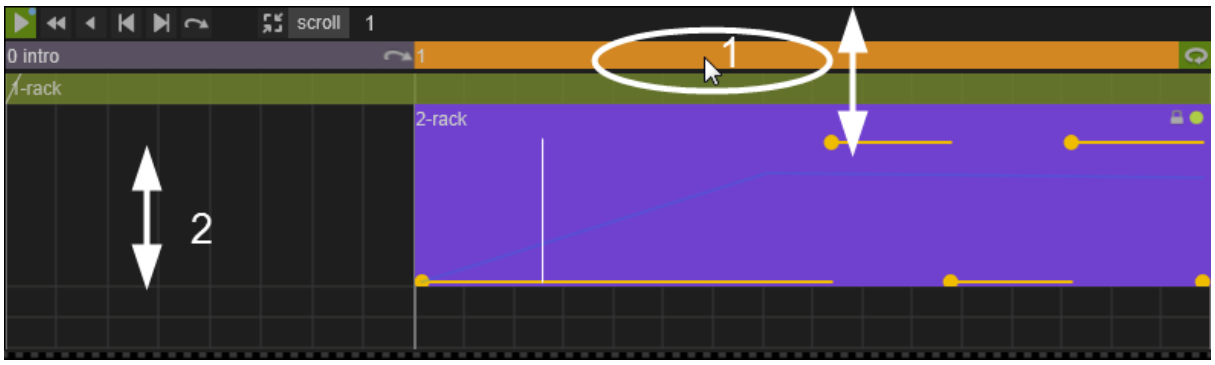
Step Curves Trigger

To change this curve type use the curves tab of our **grid element**, here we chose the step type.

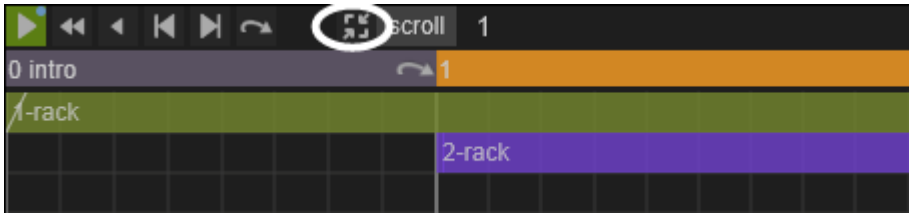
We can now create several steps when our sample will need to be played in reverse mode:



If necessary and for a better editing convenience, it is possible to zoom the grid with the mouse wheel by Clicking on the header section (1) or by Clicking in an empty area of the screen to zoom the entire grid (2).

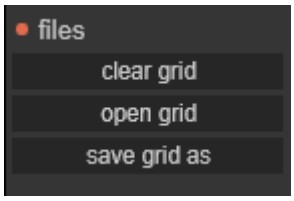


To restore the size of all the elements of the grid; Click the restore icon.



The Contextual Menu for the Grid

Like all Usine objects, the grid has its own **contextual menu**. You will find basic commands that allow you to add a row or section. There are also standard commands that are especially useful to test variations of your grid: the *save* and *open* commands:



Save a grid means that you can create a backup of your grid and this one will be independent of your **workspace**. The first use is to create variations within the same **workspace**. In this case you open your **workspace** and then you can open different backups of the grid for this particular **workspace.**

But you can also create reusable empty templates. For example, a series of sections with a particular number of bars, colors and custom names, etc. that you can insert into an existing **workspace** to use as a base that is already organized.

Now you have the main tools to create and expand your own grid. To close this chapter, here's a reference of the grid icons and their descriptions:

Summary of transport icons			
	Play the sequence.		Restarts the grid since the beginning (**section** 0).
	Restarts the current **section** from the beginning.		Previous **section** in the sequence.
	Next **section** in the sequence.		Continue to the next **section** (overrides the loop mode).
	Restores the size of the grid.		
Summary of the 3 states of a section **icon**			
	Play this **section** in loop mode.		Indicate the repetition number
	Play the **section** once and toggle in pause mode.		Play the **section** and continue to the next.
Summary of editing tab			
	Edit the settings of an existing curve.		List of editable curves available for this grid item (**rack**)

24. The Browser

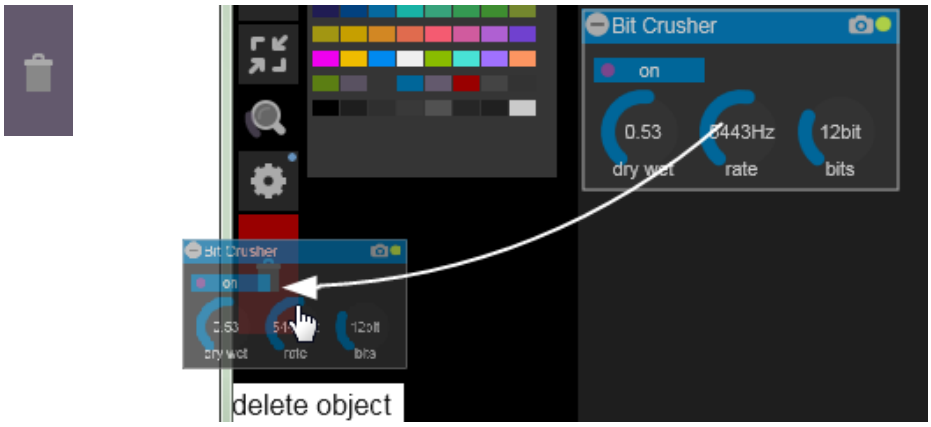
This section provides a reference to the types of files and their respective icons used within the **Browser.** The browser provides a central point to access many different types of files as well as access to the standard Usine library.

Browser Icons

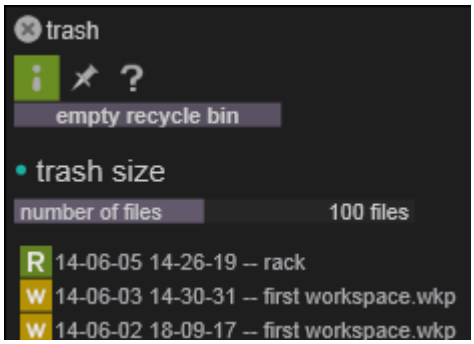
	Modules		User module
	Plug-ins (AU/VST)		Script
	Midi file		Sample
	Patch		Device
	Workspace		Playlist
	Rack		Device Set
	Video file		Fixture
	Sample bank (for the Midi sampler)		

25. The Trash Bin

The main menu provides a trash icon that you can drop a **patch**, a **rack,** or a **browser** element directly onto to delete it.

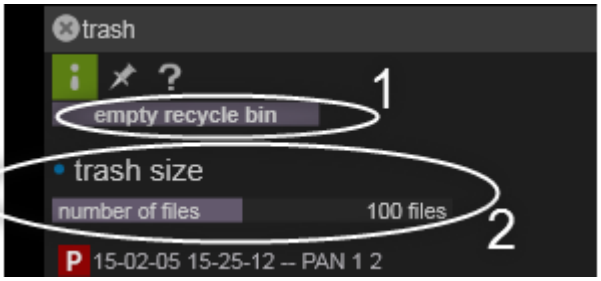


A Left-Click on this trash icon will open its window.



You can revert the contents if needed with a simple Drag-and-Drop. Note that you will find the old version of the **rack**, **patch,** and **workspaces** here too.

You also have the ability to empty the bin (**1**) and choose its maximum capacity (number of files) (**2**).



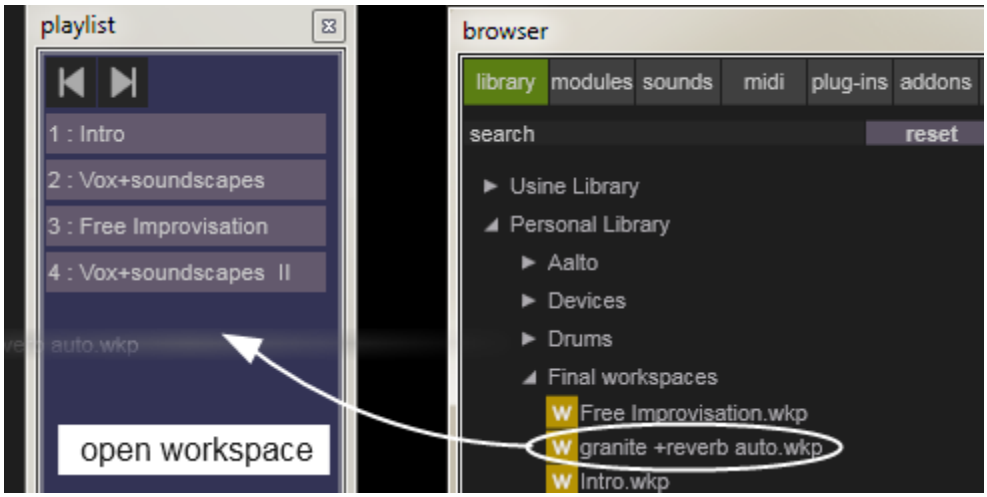
26. The Playlist Panel

If your live set is made of several **workspaces** you can use the **Playlist panel** to order your own set list.

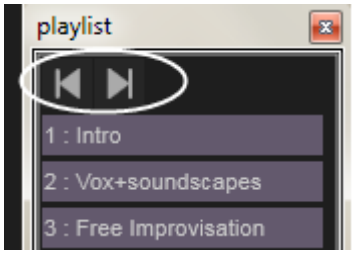
With the Playlist you can determine the order of your sets and recall them very easily. This can be achieved quickly without any prompt or confirmation dialog. The Playlist can even be controlled with a simple MIDI learn or a Keyboard assignment.

Open the **playlist panel** by selecting this icon:

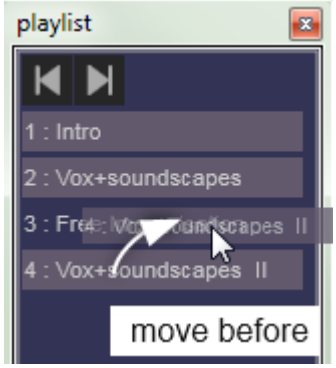
Drag-and-Drop your **workspaces** directly onto this panel:



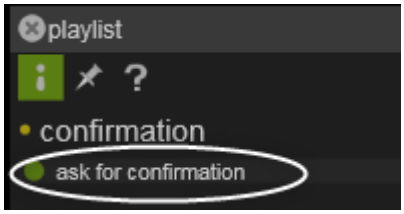
You can switch to the next **workspace** with the navigation button or directly with a Double-Click on the **workspace**.



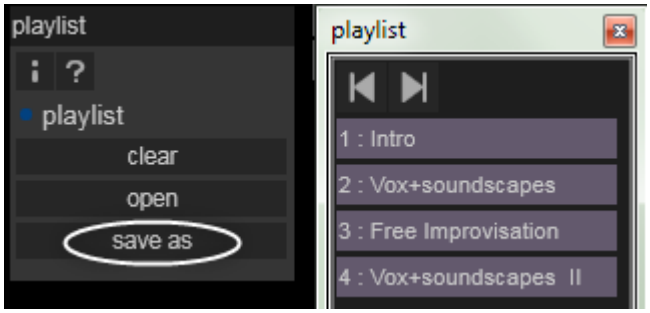
You can also change the order of the **workspaces** by moving a **workspace** over another one:

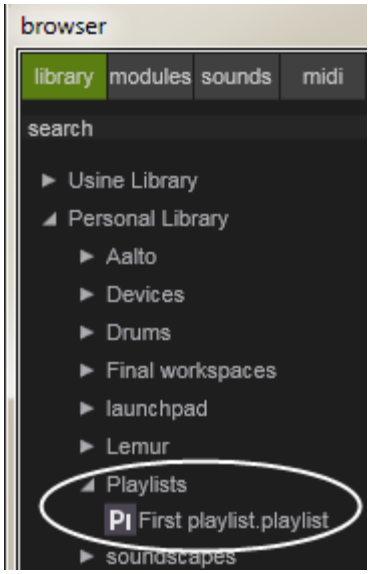


You can also decide if you want confirmation before Usine runs the **workspace**. This option is available in the **settings panel** of the playlist:



Playlists can be saved into your personal library for later recall. These files will be of *.playlist format type.



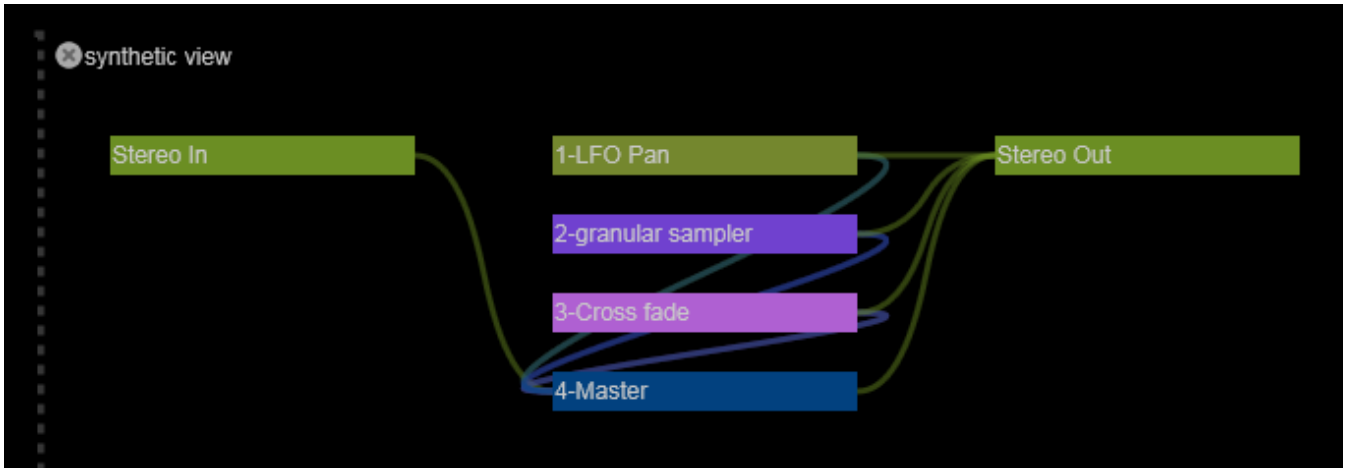


Once you have created your first playlist it appears on your **start page**. This allows quick acces by selecting the respective picture to start the **workspace** and playlist.

27. The Synthetic View

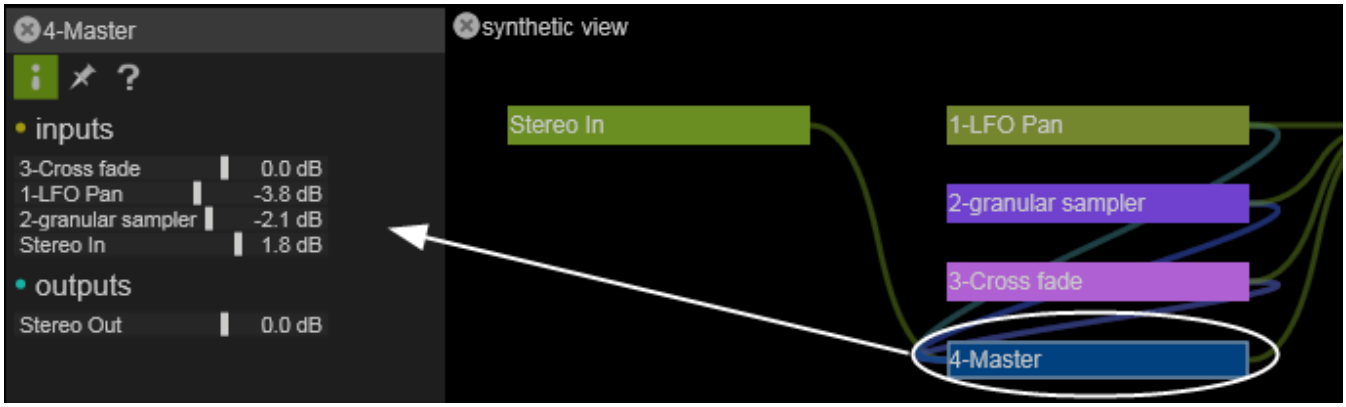
As we see before in the first workspace tutorial, the **synthetic view** offers a general view of the routings within your **workspace**.

You can quickly check that all your routings are as intended:



This view also offers some quick access to manage the levels of each **rack** routing.

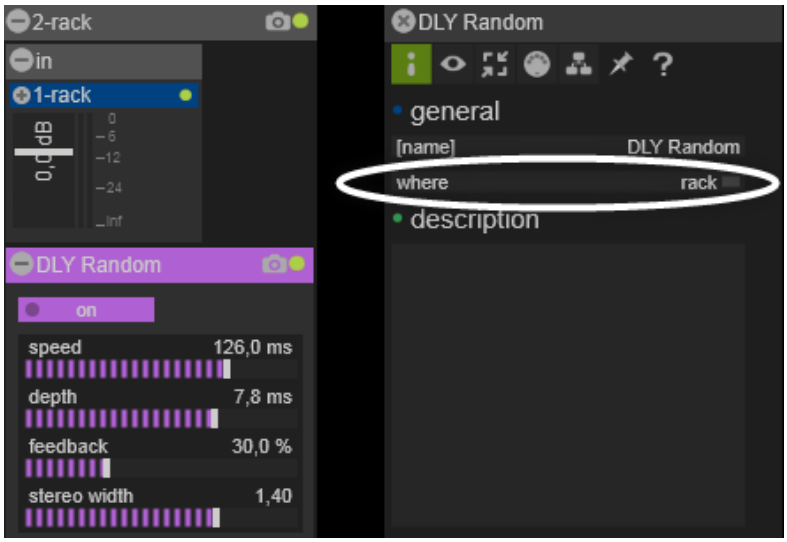
As you can see below, the master **rack** is selected and within the **settings panel** you can set each gain level of the incoming **racks**.

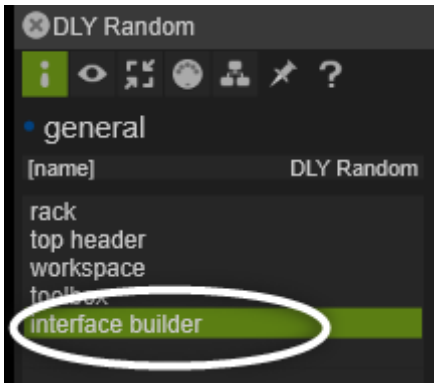


28. The Interface Builder (IB)

The Interface Builder (IB) is a display mode particularly suited for on-stage use. This interface provides a clean layout space where it is useful to see only the minimum controls needed for a performance. In this mode the menu and the objects you select will be the only things shown.

To put an object into IB mode, Right-Click it to view the **properties panel** and change the visibility option (*where*) from **rack** to **interface builder**. An example with *DLY Random* is shown below:

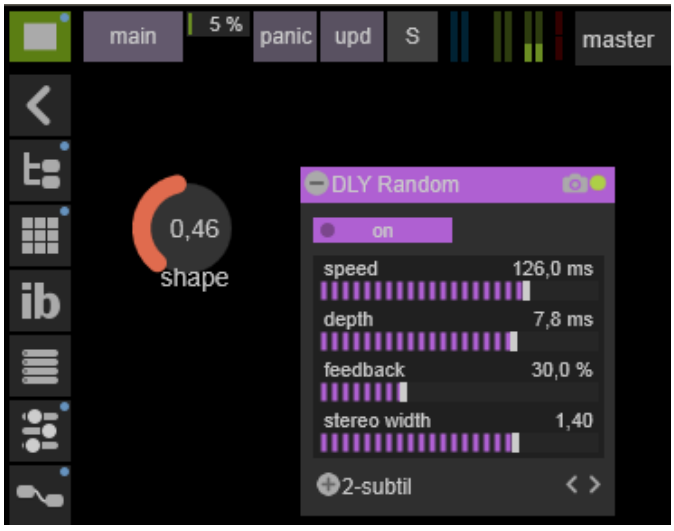




Next select the Interface Builder icon to view the objects placed there.

It is also possible to apply this option to an individual object.

In this case the *shape* **knob** of the SEQ Cut **patch** is the only object of the patch placed in IB mode.



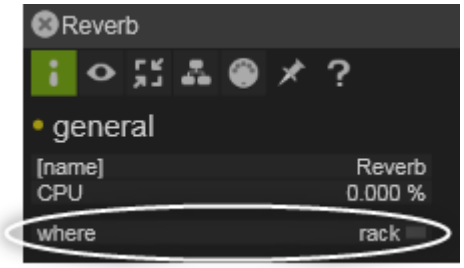
In IB mode we can also display the menu commands by pressing this icon.

29. The Toolbox Panel

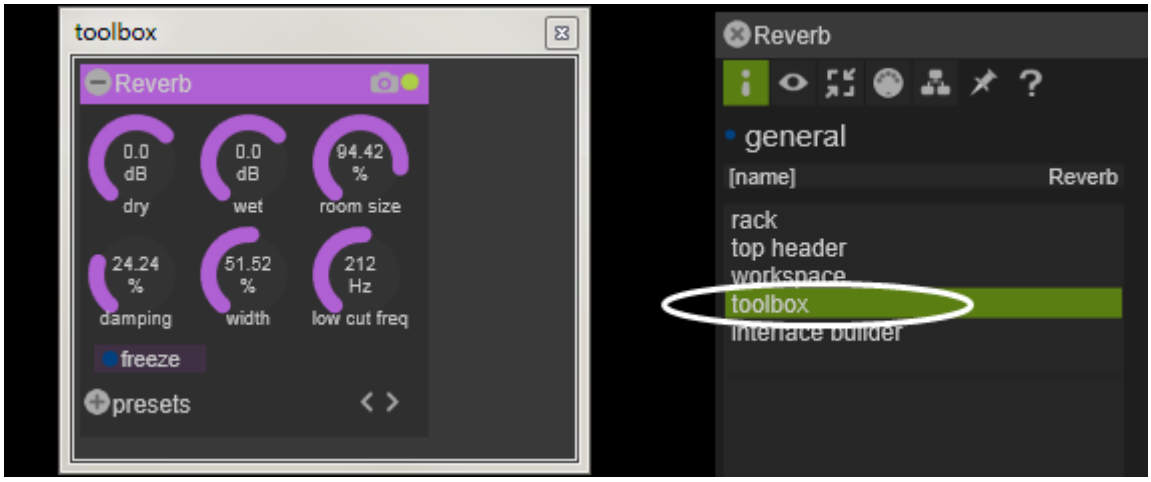
The **toolbox** is a floating panel where we can add objects and panels to have quick access and to have them always visible within our **workspace.**

Use this icon to open the **toolbox panel**.

Here we have a reverb **patch** in a **rack** and we want to have access to these parameters in a separate window. We can choose to display the reverb in the **toolbox.** For this we select the option *where* and set this to **toolbox.**



In the **combo box**, select **toolbox**.



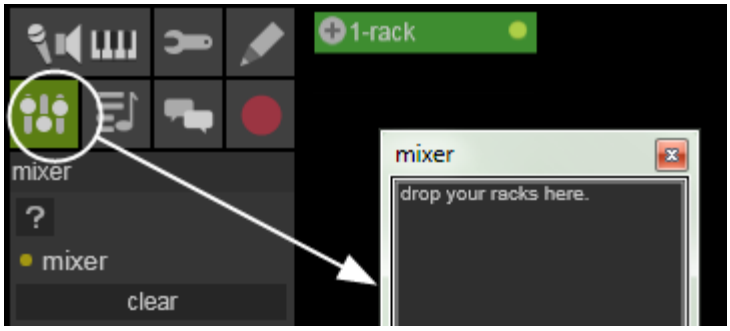
We can also display only one element of a **patch** in this **Toolbox**.

Shown below is the **fader** *stereo width* of a *PAN Stereo Enhancer* **patch;** as a single displayed object in the **Toolbox.**

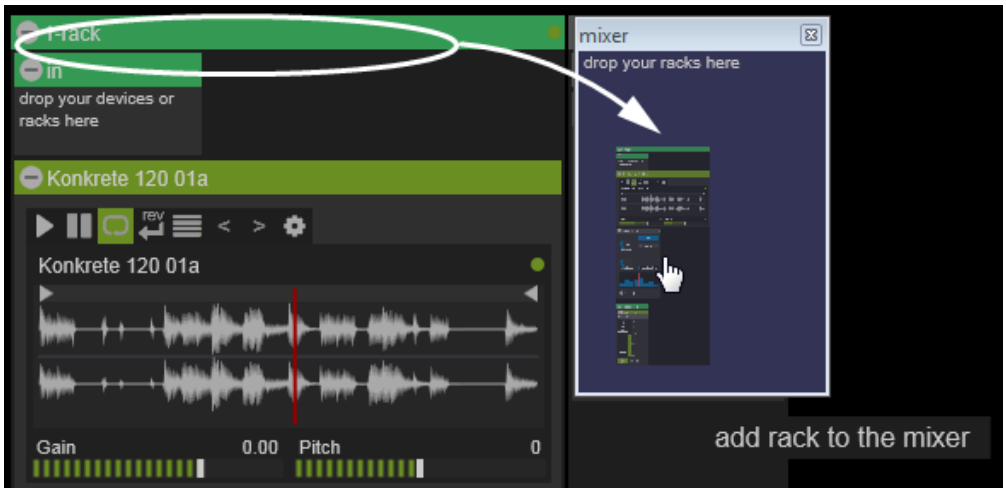
30. The Mixer Panel

Usine also contains a **mixer panel** to organize and manage our performance levels.

Start by opening the **mixer panel** by clicking the icon in the **panel menu**:



We can Drag-and-Drop each **rack** we want to control into the **mixer panel**:



Here is an example where we added our three **racks** to create the **mixer panel**.

Several controls are visible when the mixer object is created:

- A **knob** to set the audio input level.
- A vertical **fader** for the audio output level.
- ON/OFF **switch**.
- Mute and Solo **switches**.

31. Midi Learn

MIDI Control: A Simple Assignment Example

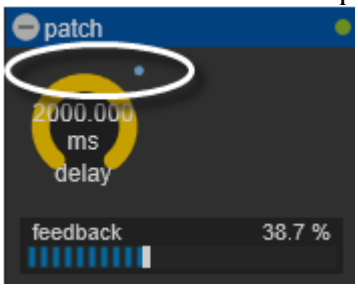
To enable MIDI Learn mode Click on the icon or use the keyboard command `[CTRL/CMD+M]`.

When MIDI Learn is activated the control interface will be disabled, however each object will turn purple indicating it can be taught a MIDI or Key command.

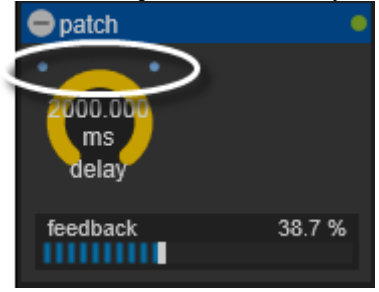
An example of this behavior can be seen below:

To apply MIDI Learn to an object, select the object and turn the respective MIDI controller knob or fader to send the message.

A small blue led in the top right will confirm that the assignment has been made to an object.



On the top left of the object you will see an indicator whenever the message is received.

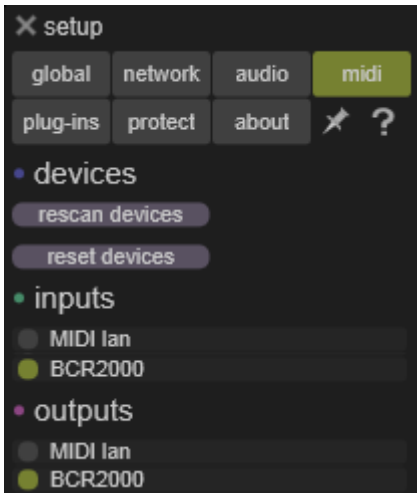


MIDI Learn mode will remain active until disabled. During learn mode, multiple objects can be assigned sequentially. When MIDI Learn is disabled the control interface will once again be accessible along with any assignments that had been made.

MIDI Feedback (Motorized or Visual Feedback)

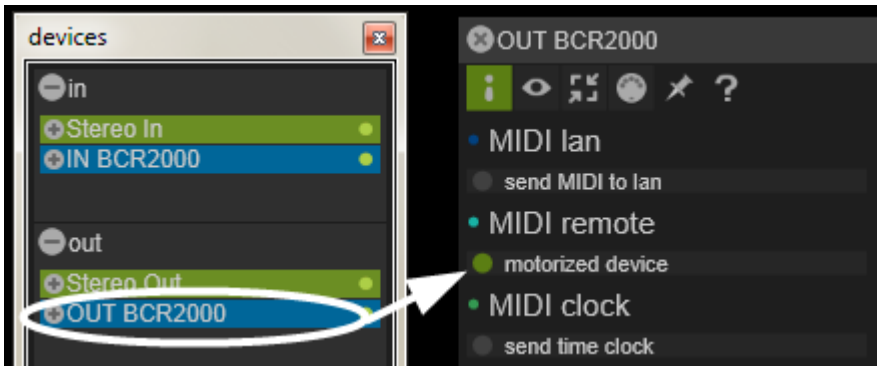
To use MIDI controllers which have a motorized feature (i.e. BCR2000, BCRF2000 and so), or if you need visual feedback at your controller (Launchpad type, LPD8, nanokontrol2…), you must setup the **device** MIDI output as well as the MIDI object used (**fader**, **knob** and so…) to provide this feedback.

Set your MIDI controller as an *input* and as an *output* in the **Setup panel**/Midi tab:

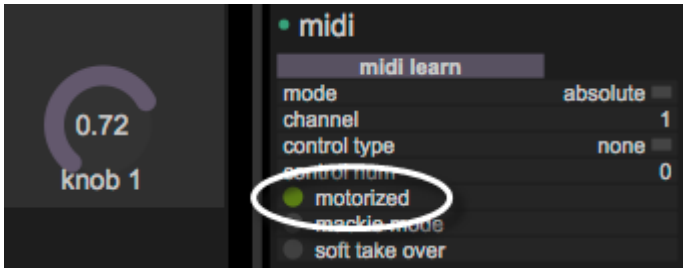


Open the **devices panel** and Right-Click on the MIDI out **device.**

Select the motorized device option in the **settings panel**:



All interface objects that are to be controlled or require feedback also need their motorized options set. Right-Click on each of the objects to open the **settings panel** and activate the motorized option.



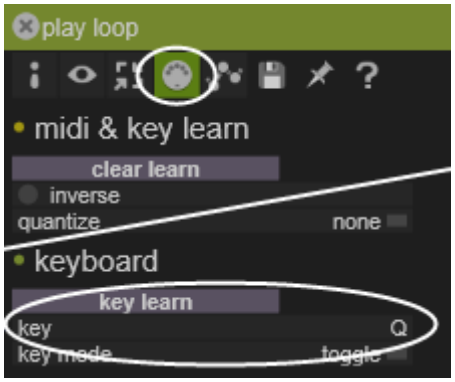
32. Key Learn

Key Control: A Simple Assignment Example

Locate the *grain impact hi* sample from the *sounds/various/selection* folder and Drag-and-Drop this to a rack. When prompted select the grain sampler template. Activate the learn function with the same icon as shown before in the MIDI Learn example.

Click on the loop **switch** of the grain sampler to select it and press the Q key on your keyboard to assign the key.

Open the remote tab of the and you will see the key that was assigned. Just as was done in the MIDI section, once assigned the object will have a blue led on the loop switch.

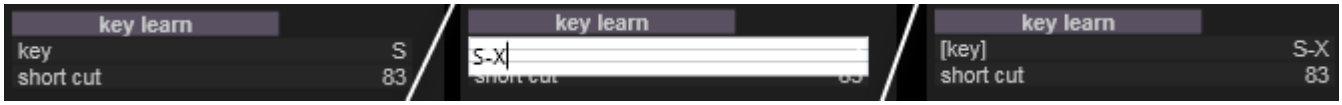


Key Learn: Assigning the Increment and Decrement of an Object

On a **fader** or list box you can assign a key to increase and another to decrease the value of the control. The two key values must be separated by the character [-] (minus).

First assign the S key from the keyboard to the pitch **fader.**

In the remote tab, Double-Click on the S to edit this value and add [-X].

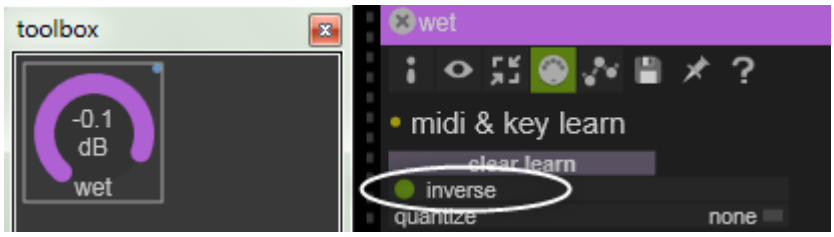


This means that now the [S] is used to increase and the [X] is used to decrease the pitch value.

33. The Remote Tab of the

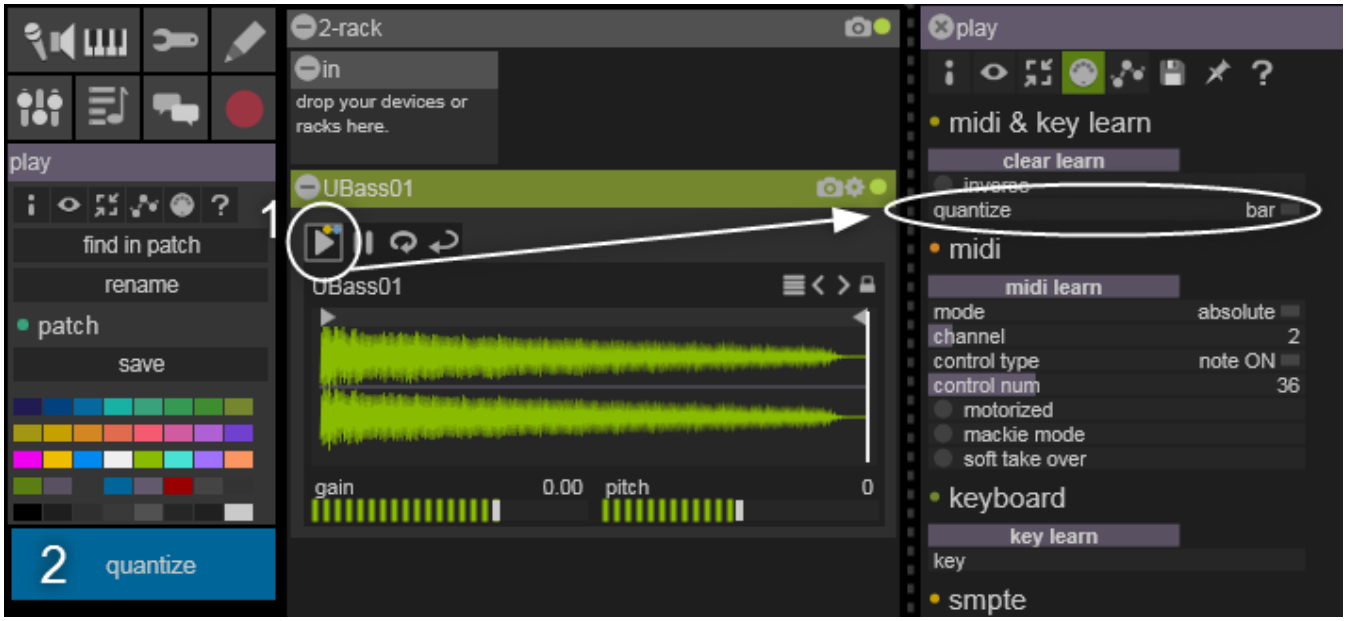
Invert a MIDI /KEY Learn

It can be useful to invert the action of a MIDI **fader** or the MIDI XY pad of a MIDI controller in a live situation. You will find a simple solution for this in the / remote tab for this object. Here a **knob** is inversed:



Quantize the Midi / Key Learns

Another useful tool is the ability to quantize the input of your control. Here we decided to quantize to a bar for the *play* **switch** of a normal sampler (1). When quantization occurs you will see a blue *quantize* panel flashing below the **color palette** (2).



The possible quantization values are::

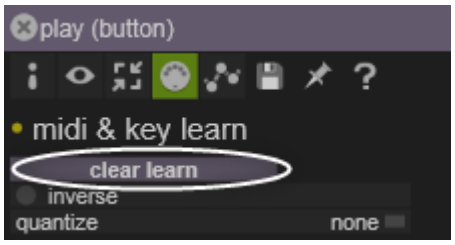
1. no quantization
2. cycle
3. bar
4. beat
5. 1/8
6. 1/16

Reset a Key or MIDI Learn

There are two methods to reset a MIDI or Key Learn:

The first way to reset the assignment is to enter learn mode and Double-Click on the object you want to reset. This will remove the blue led indicator, effectively removing the assignment.

A second way to reset the assignment is to Right-Click on the object and select the remote tab of the **setting panel**. You can now reset by pressing the *clear learn* **button**:



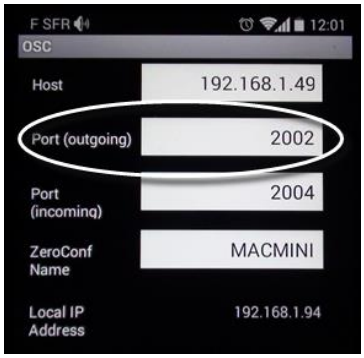
34. OSC Learn

Usine also offers an OSC learning mode. Here are some exercises that will help introduce this function.

First OSC needs to be enabled in the **setup panel**, network tab:

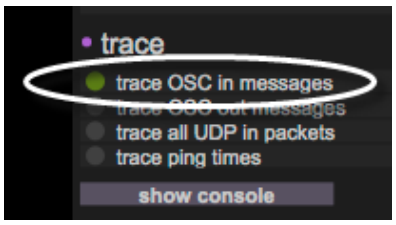
Set the OSC port to the same port as the remote OSC device. We will use the TouchOSC application to demonstrate.

The port number displayed in TouchOSC:



Once the port configured you will be able to view the message communication. In the **setup panel** / network tab activate the option "trace OSC messages in". Whenever an OSC message is received you will see a red LED indication in the **master panel** as well as the actual incoming messages in the **trace panel**:

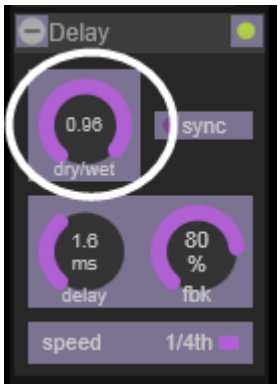
Select this icon to view the **trace panel**.

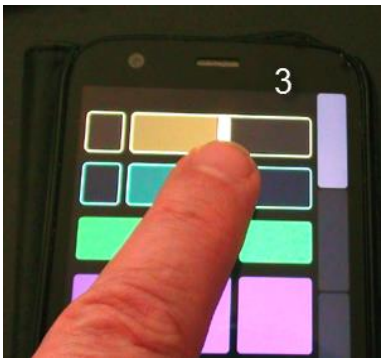


OSC Control: A Simple Assignment Example

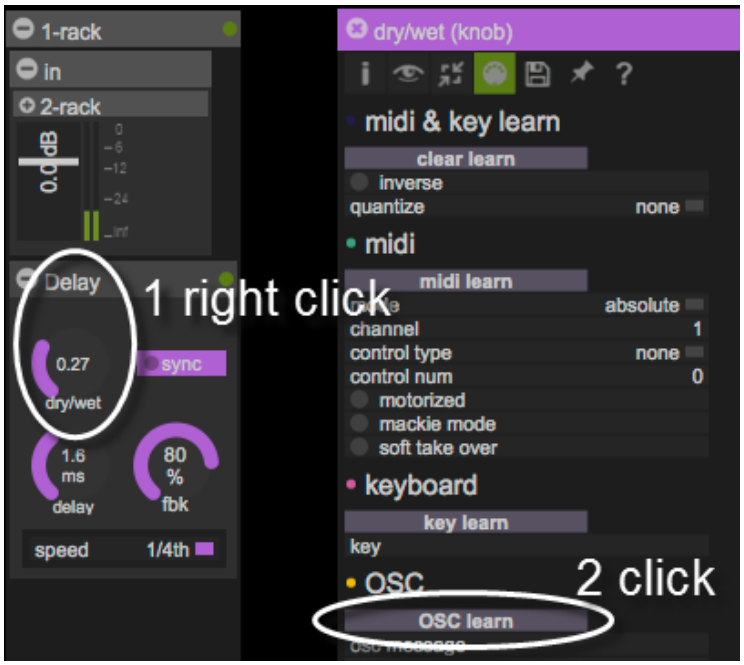
For this exercise add the **patch** named *delay from* the *browser/Audio FX/delay* folder. We want to use a **fader** from TouchOSC to modify the *dry/wet* parameter of the delay. Select the remote icon as was done before for the MIDI learn:

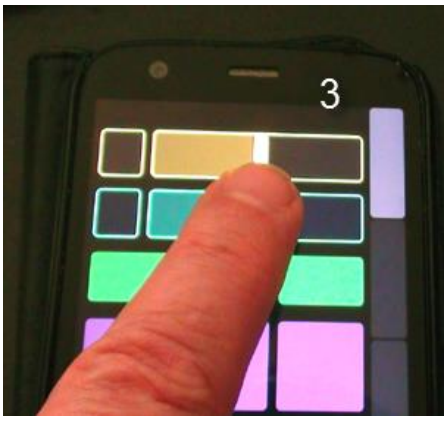
Next select the **knob** dry/wet and move the **fader** on your TouchOSC **device**:



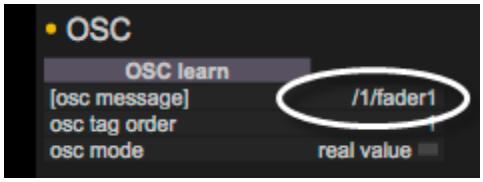


A second method to learn the OSC message is to Right-Click on the **knob** to display the **properties panel** and select the Remote tab. You can then Click on the OSC learn **button** and move a **fader** in TouchOSC to assign the OSC message:





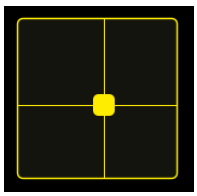
Once the TouchOSC control is released the OSC parameter will be displayed as the "OSC Message" and you will now be able to control this parameter.



The osc mode option allows the ability to receive the actual value sent from the OSC device, or convert them to a common Usine [0..1] range.

OSC Control: Assigning OSC to a 2-Dimensional Object (XY)

Another option available is the “osc tag order”. This option is utilized when receiving multiple values simultaneously. An example of this can be seen when an object of the XY type is used in TouchOSC. The received values will be received as one line:



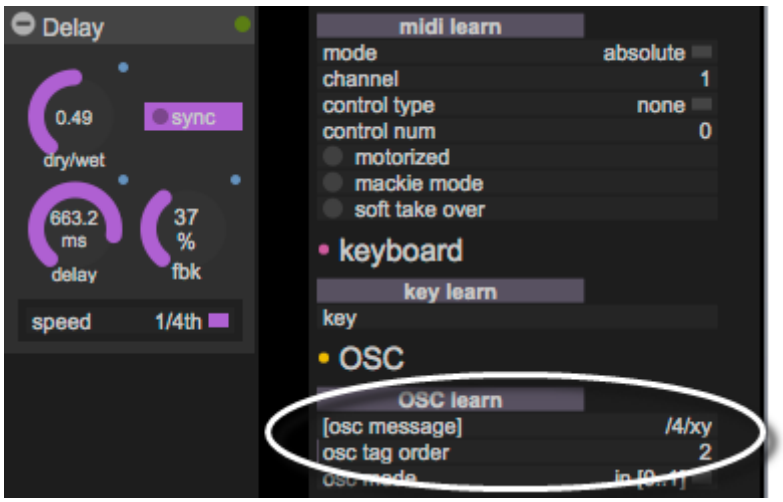
OSC in from 192.168.1.94: /4/xy (ff)

The tag order allows us the ability to separate these values so that they can be applied to multiple Usine objects.

To demonstrate the tag order, we will again use our previous example of assigning OSC to the delay module. In this example we would like to set the X value to the *dry / wet*, and the Y value to the *fbk* parameter of the delay module.

Without the tag order enabled if you would assign the XY individually to two knobs, they would not respond correctly. This response is problematic when learning as the message is combined as explained above.

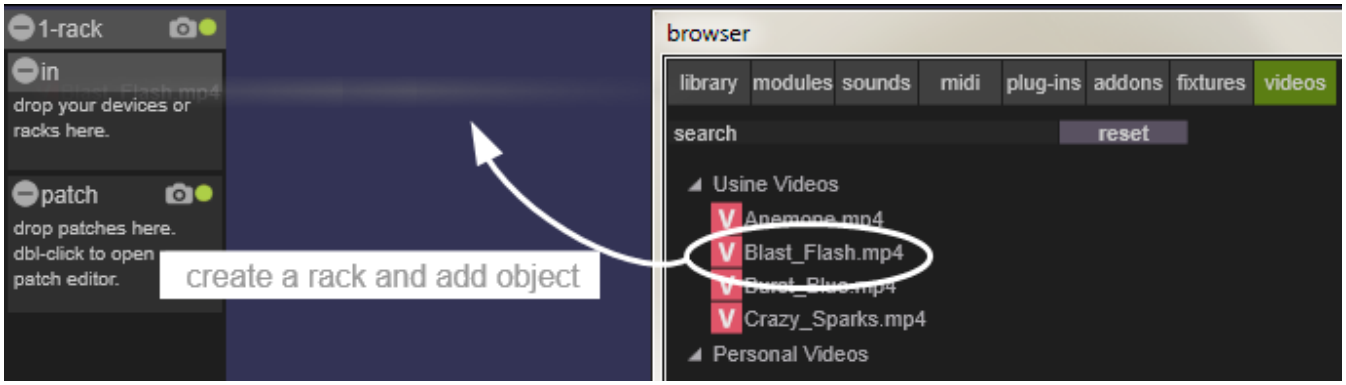
To correct this problem we will assign a tag number to each object to differentiate which part of the message will control the specified object. To do this set the option *osc tag order* to the value 2 for the second **knob** named fbk (feedback) and leave the option to 1 for the first **knob.**



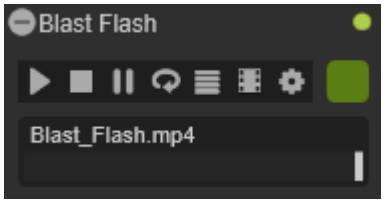
35. Video

Creating a Video Player

Video integration in Usine Hollyhock is really quite easy. You can create a video player by a simple Drag-and-Drop from the **browser** in the same fashion as creating a sampler template. Videos now have their own tab from within the browser as well:



Once created you can use the standard transport **buttons** to play your video file.



You will also notice new available tools within the header for video applications.

Besides the standard transport icons and the SMPTE indicators there are two useful icons:

Display/Hide the video player window.

Toggle the video to full screen (Use the escape key of the keyboard to return)

Utilizing the video player requires compatible codecs.

If problems are encountered you can download the latest tested codec pack such as the K lite.

36. Additional Workspace

Usine Hollyhock version 2 now has the possibility to utilize two **workspaces** at the same time. To switch between the two **workspaces** in parallel, use the **switch** main / additional located within the **master panel:**

Here two examples showing how this new function can be useful:

Useful for Improvisation

During an improvisation session with Usine, you have always had the ability to add **patches** or **racks** "on-the-fly" to create variations.

Sometimes this particular **rack** you would like to add belongs to a **workspace** and was not saved individually. Previously it was not possible to open another workspace without interrupting our current one. This is now possible by switching to **additional** mode:

The same **switch** will toggle to navigate from one **workspace** to another.

These two **workspaces** share the same audio engine, main volume, tempo, etc.

Helpful for Workspace Organization

The wonderful thing about having simultaneous **workspaces** is the ability to manage and organize your set.

In many setups Hollyhock could be used to provide direct effects to other artists such as a vocalist or another guitarist while you are also managing your performance in Usine. In previous versions this could bring confusion as rack management could become cumbersome while managing multiple-use situations. Such examples of this situation could be described as a vocalist who would like to utilize the compressors and reverb of Hollyhock, while you are performing direct through the interface with plugins and library patches.

With the additional **workspace** it becomes easier to manage different-use applications while maintaining your own direct performance through Hollyhock. Now you are able to utilize one workspace for external sources while performing your own parallel set.

37. Bindings

Another way to remotely control objects is what we call **bindings**. **Bindings** along with defined **buses,** provide a quick way to route movement and modulation from a parameter to another anywhere within the **workspace**.

What is a Bus?

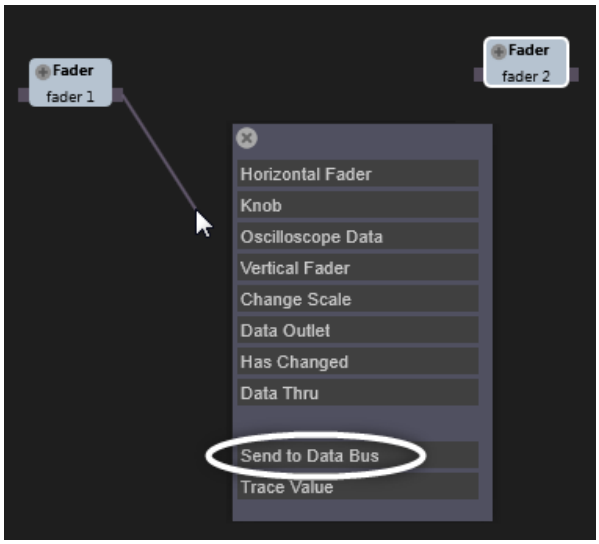
A **bus** is like a wireless system where you can link two controls regardless of their location within a **workspace**:

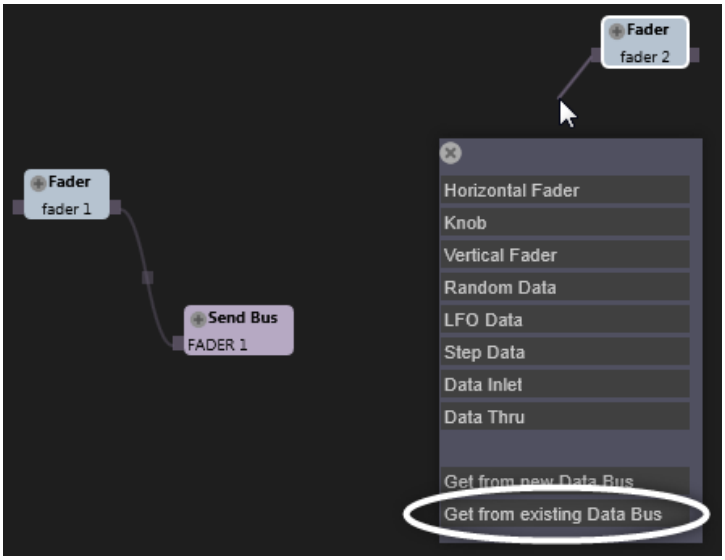
To demonstrate how a bus works:

Use the shortcut `[CTRL+T]` to create a new **rack** and Double-Click the **patch** to open the **patch editor window**.

In this new **patch** create two **faders** and Drag a wire from the **fader** 1 **outlet.** Choose *Send to Data Bus*.

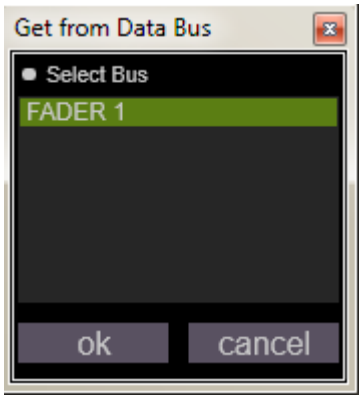
Then from the **fader** 2 **inlet** drag a new wire and this time choose *Get from existing Data Bus*.

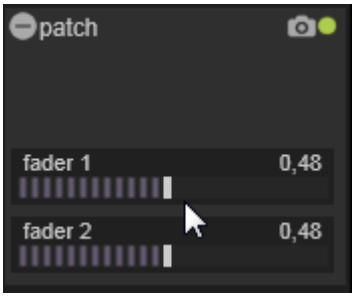




In the query window choose our previously created **bus** named **fader** 1.

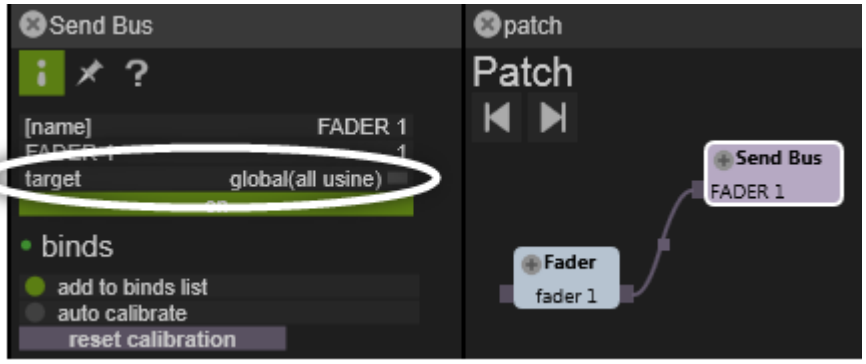
Now if we move the **fader** 1 object, the **fader** 2 value will follow the movement:





Here the two **faders** are in the same **patch**, but this method will work regardless of the location of the second **fader**/object within your **workspace.**

You can set the target destination to determine if the **bus** will be active only in the current **patch,** or higher in the Usine hierarchy.



The available target destinations are as shown below:

- **Global (all Usine).** Works regardless of the place where you put your **fader**.
- **Rack only**. Only works inside the **rack** where your **bus** is located.
- **Top parent patch.** Will operate only up to the main parent **patch**.
- **Current patch**. Will operate only in the current **patch**.

The Different Buses Type

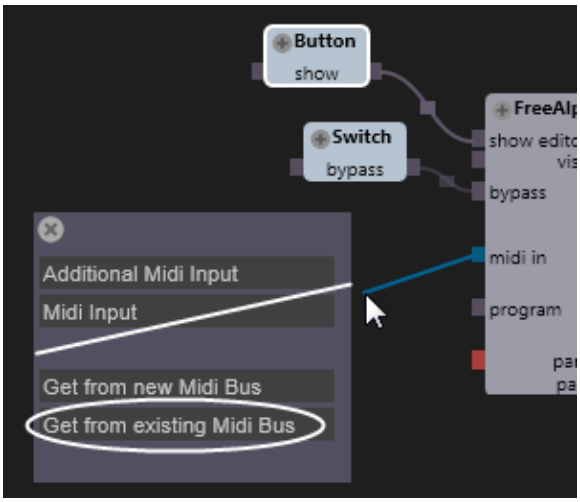
In Usine Hollyhock you can utilize up to three different types of **buses**:

- Data and Array
- MIDI
- Audio

Send MIDI with Bus

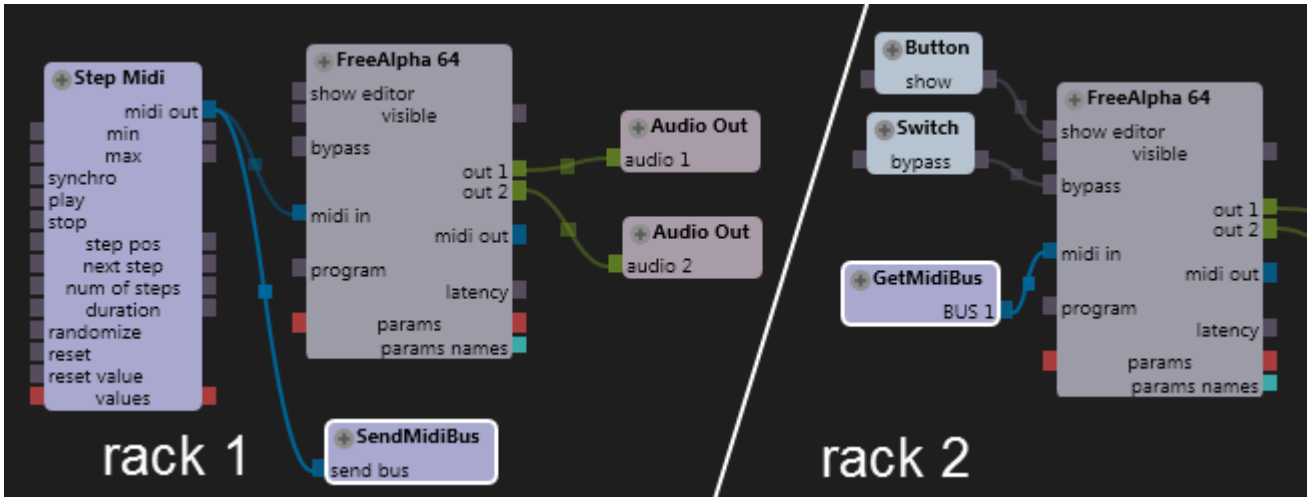
Shown below is a Step Midi **module** which sends a MIDI sequence directly to an instance of the **Free Alpha** synthesizer. This Step Midi module can also be sent to a MIDI bus by dragging a wire and selecting *Send to Midi Bus.* A second instance of the **Free Alpha** VSTi is placed in another rack, again dragging a wire and selecting *Get from existing Midi Bus.*

Rack 1: Send to MIDI **bus**.



Rack 2: Get from existing MIDI **bus.**

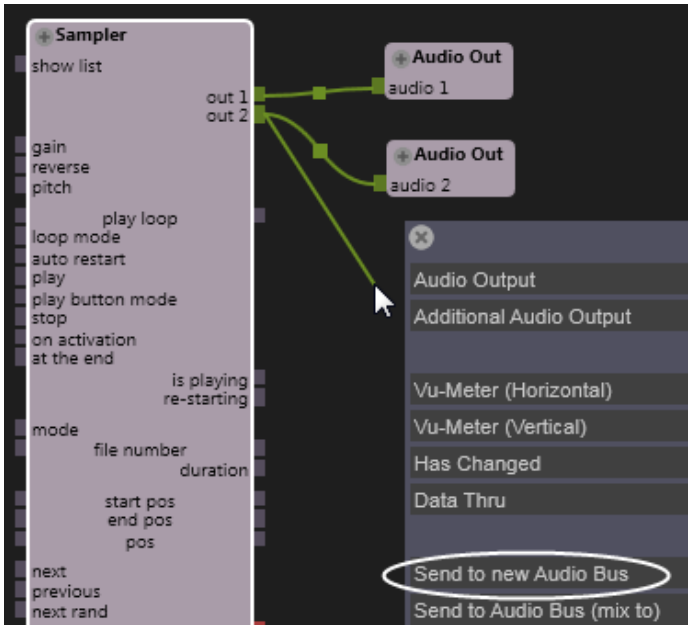
Our two **buses** now share the same name (we'll see this concept in more detail later) and can communicate between each other.

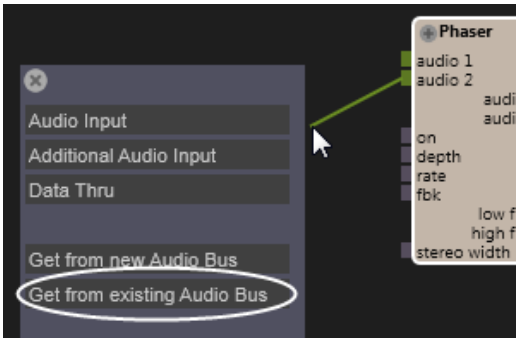


Buses can be of great use to clarify the layout of a **patch** or to communicate between different **racks** and **patches**. Although the concept of buses can be useful in remote patching, it is not desirable to use systematically when designing. The bus functionality is more intensive and requires much more CPU than the standard wiring method, therefore this function should be approached with a specific use and not just for cleaning up the patching interface.

Send Audio

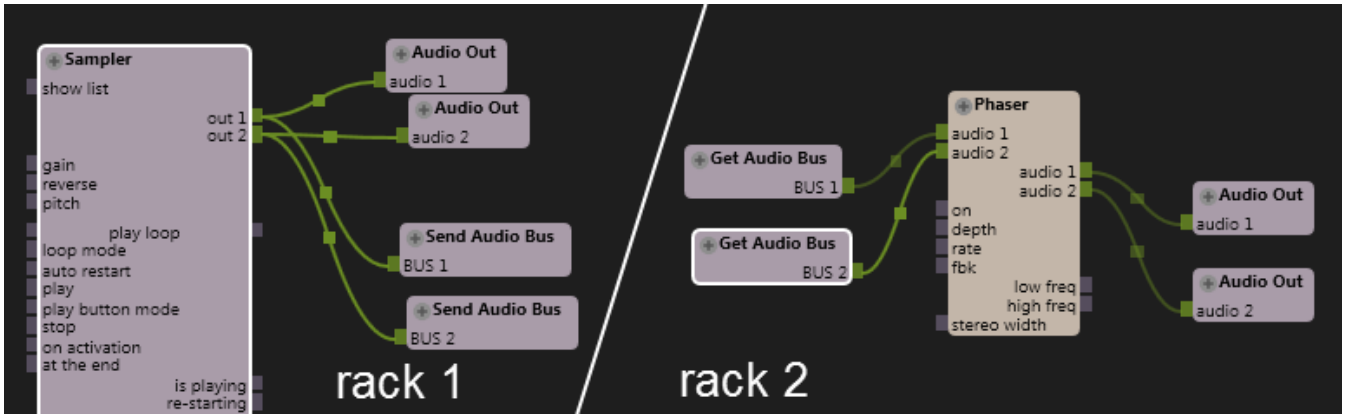
Buses can also be used with the Audio Data Type:



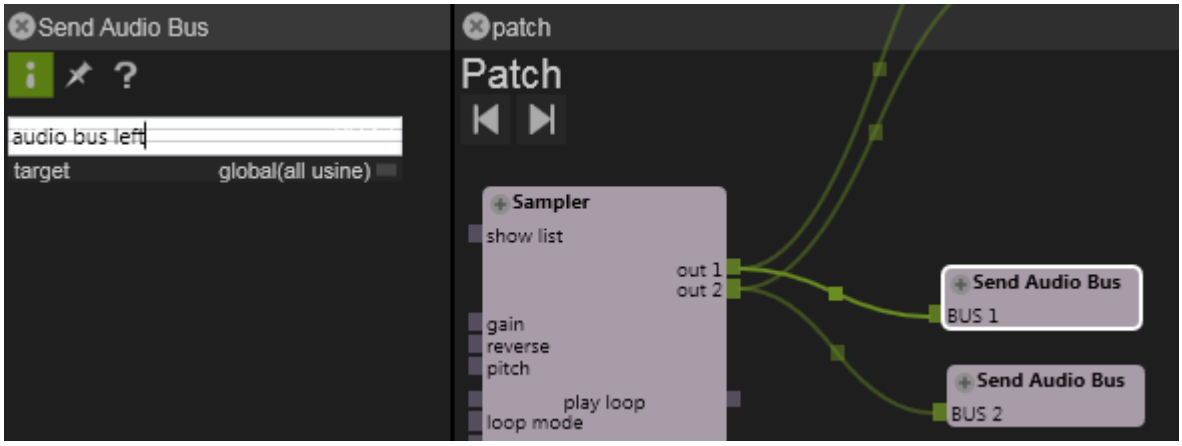


Rack 1 Send to new Audio **Bus.**

Rack 2: Get from existing Audio **Bus.**



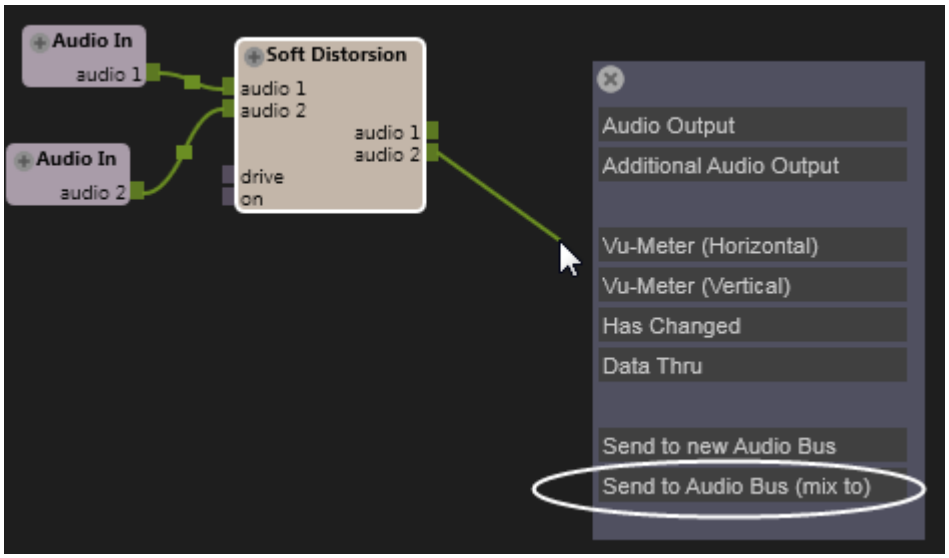
It is of course possible (and advisable) to rename these **buses**. This allows you to quickly organize your **patch** and save time, while preventing confusion with generic titles.



Send Audio to an Existing Bus

You can also choose to send audio to a specific audio stream or channel.

In the example below the **sub-patch** soft distortion is being displayed and routed to the AUDIO BUS RIGHT channel of an existing **bus**.

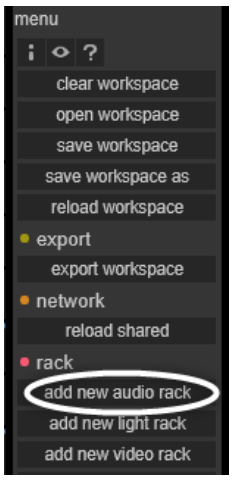


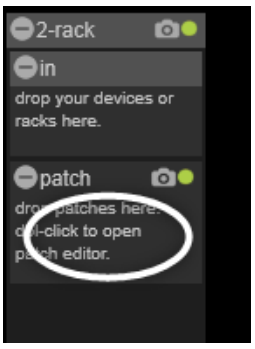
Buses are not case sensitive and will connect regardless of the case that is input. Buses will default to upper case when entered, and will be displayed in upper case when prompted to connect to an existing one.

Use the Bindings

This section provides an example of how to apply a **bus** to understand the Usine **binding** concept.

First Click on an empty zone of an empty **workspace** to see the **contextual menu** and Click on the button *add new audio rack*.

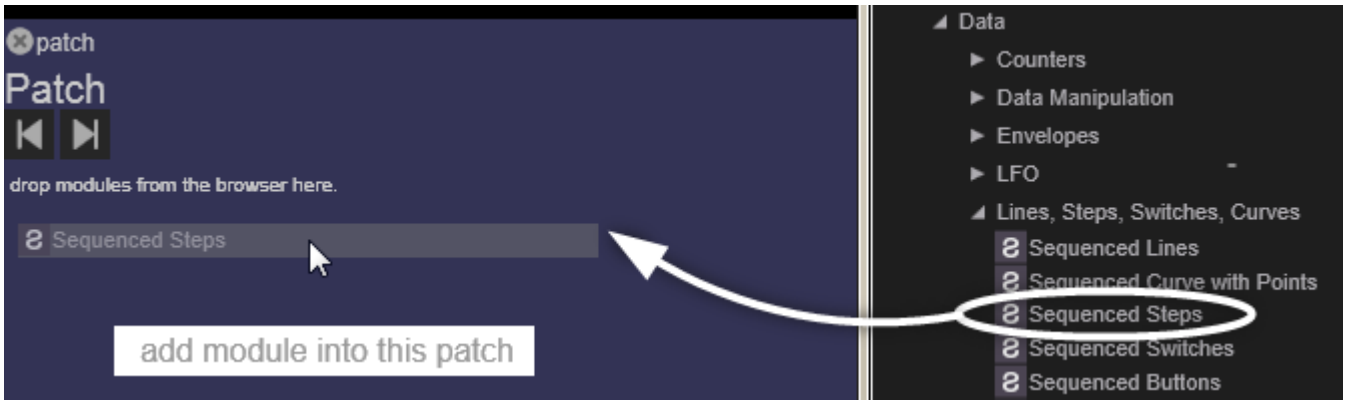




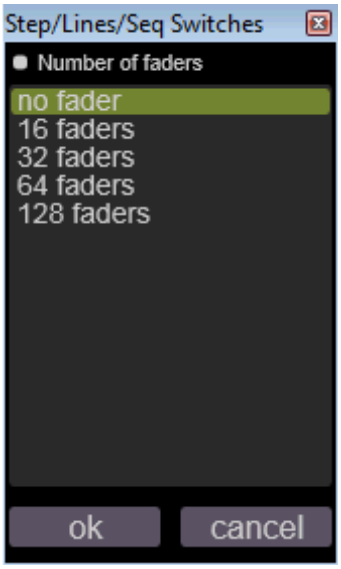
Once the rack is created open the **patch window** with a Double-Click.

Drag-and-Drop the **module** *sequenced step* into the **patch window** from:

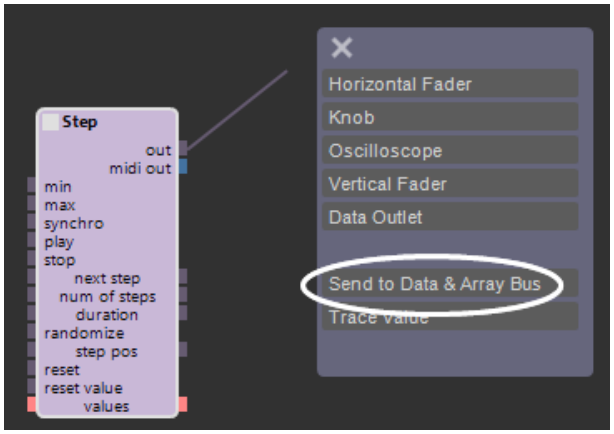
Browser/modules/data/Lines, Steps, Switches, Curves:



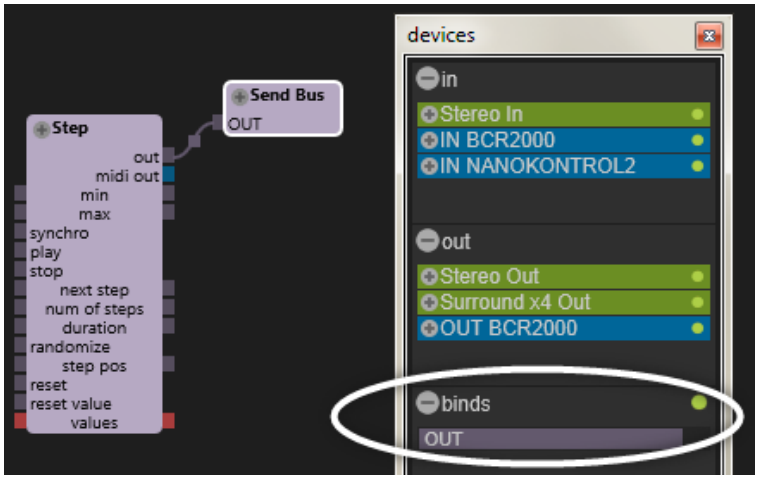
In the query window choose *no fader:*



Next Click-and-Drag a wire from the **outlet** named *out* and in the pop up choose the *Send to Data & Array Bus* option.

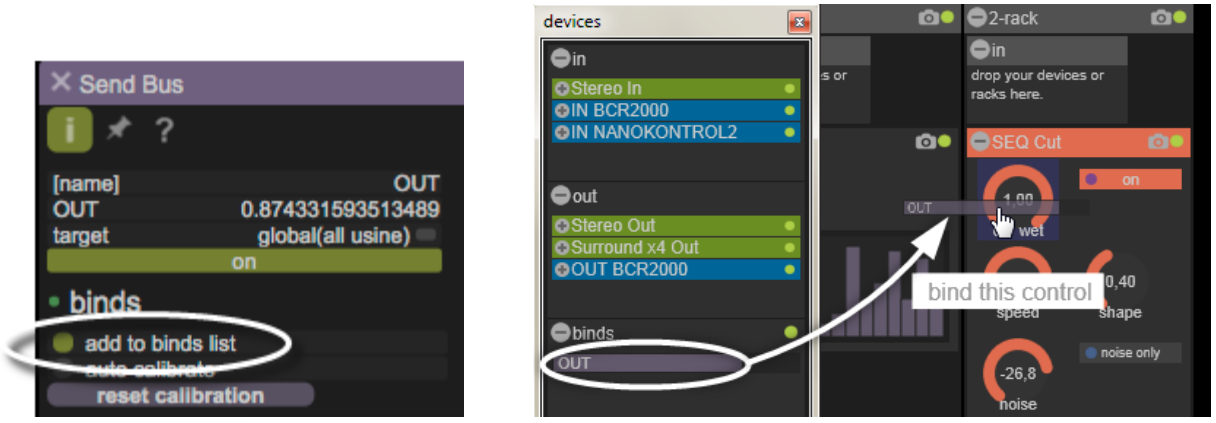


A new *Send Bus* **module** will be created, and if you open the **devices** panel you will see that a new **bind object** has been created in the **binds panel**:



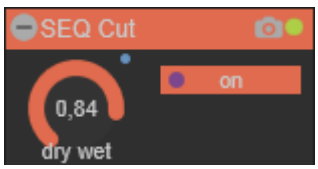
Note: If you rename the *Send Bus* **module** the **binding** will be renamed as well.

If you access the of the *Send Bus* **module** you will also find an option called *add to bind list*. Here you can specify if you want the **module** to be represented in the **binds panel.**

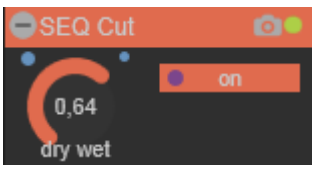


Now that the **bus** is represented in the **binds panel**, you can Drag-and-Drop this new **bind** to another object. As shown above and to the right, we have assigned the **bind** output to the *dry/wet* **knob** of a *SEQ Cut* **patch**.

As with the MIDI Learn assignments, a small blue LED will be applied to the object that the bind has been applied to. When the object is controlled by the remote **binding** object, again a blue LED will indicate the reception of the value.



Assigned to a **bind**.



Bind controlling object.

38. Remote Share – Patches via the LAN

Usine Hollyhock can share **patches** with all computers connected to a local network. This capability allows the distribution and remote control of the performance by multiple computers.

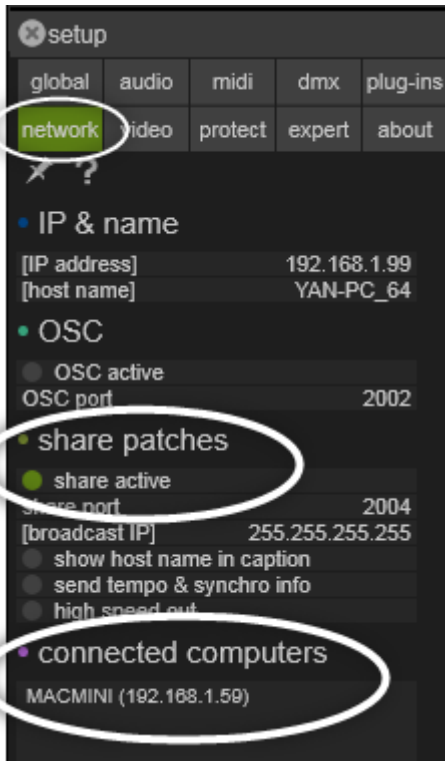
The purpose of this chapter is not meant to discuss local networks in-depth, but to demonstrate the ability to easily share **patch** functionality. This capability allows multiple installations for academic training and allows the ability to network multiple computers for a combined performance.

Share Patches: Quick Configuration

Open the **setup panel** and choose the network tab.

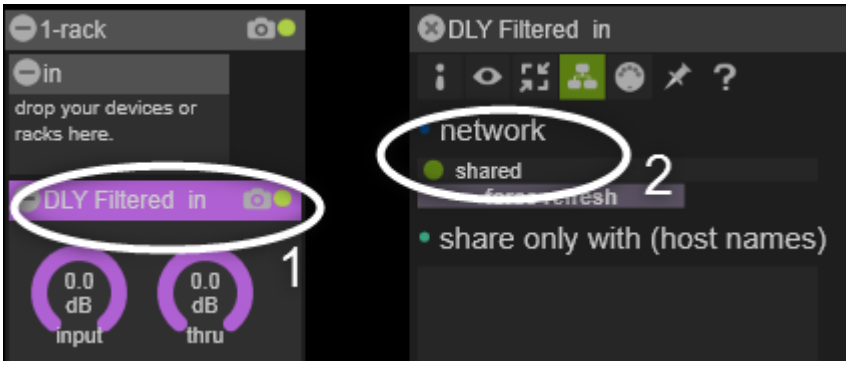
Enable *share active* and select a common port number you want to use. This port number must be the same for all computers and instances of Usine Hollyhock to communicate.

All connected computers can also be seen in the **setup panel** network tab.

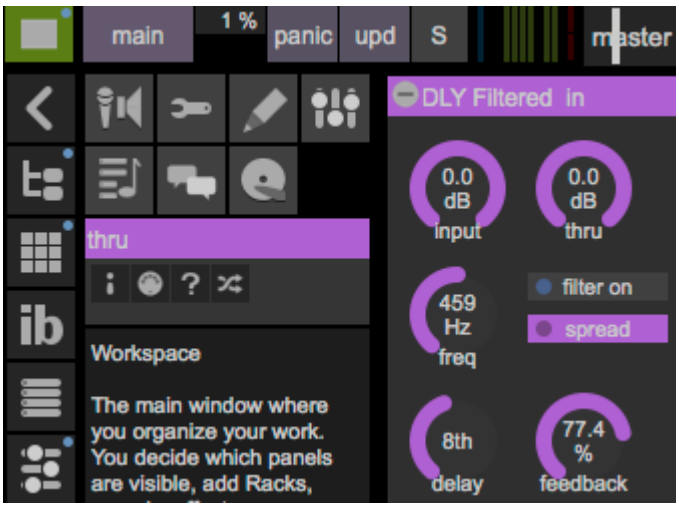


Sharing a Patch

Right-Click on the **panel** (1) of a **patch** and in the /network tab enable the *shared* option (2).



On the second computer connected to the network this **patch** will appear automatically in the **workspace** (if enabled and sharing the same port number as in the setup of the first computer).

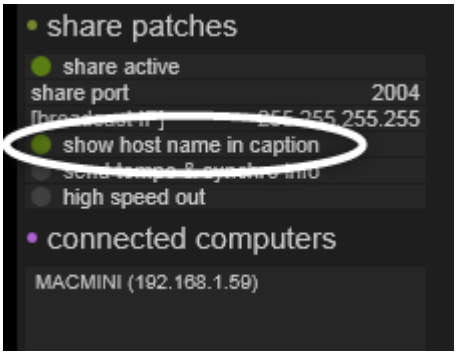


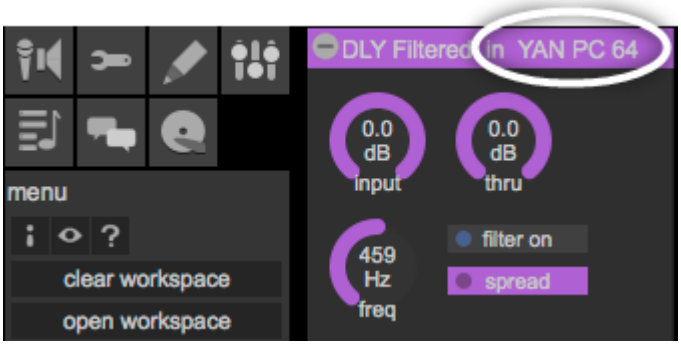
You can now move a **fader** on this **shared patch** to modify parameters of the original one located at the first computer.

Note: Only the preset manager **module** is not cloned. Remember that this **module** is only a kind of remote so we don't really need it here.

The preset manager **module** does not clone on the remote computer.

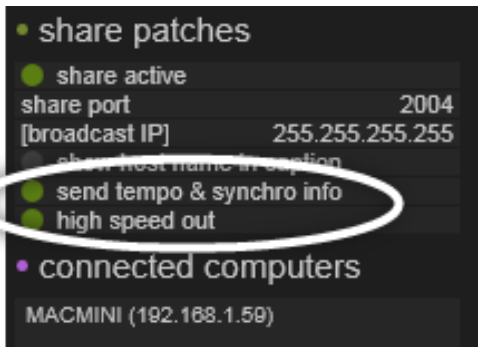
In the *setup*/ network tab the option *show hostname in caption* is useful to identify which computer is currently sharing a **patch**. The host name will be shown in the caption of the **patch**.





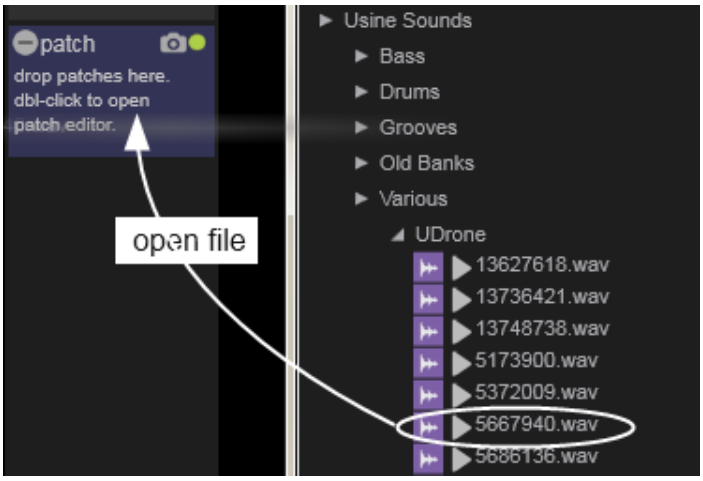
Two other options are also available in the setup:

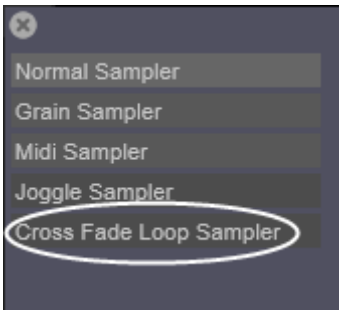
- **Send tempo & synchro info:** Sends the synchronization and tempo information to the connected computers.
- **High speed out:** Use this option if you want to send precise data or if you plan on sending a lot of information to the connected computers.

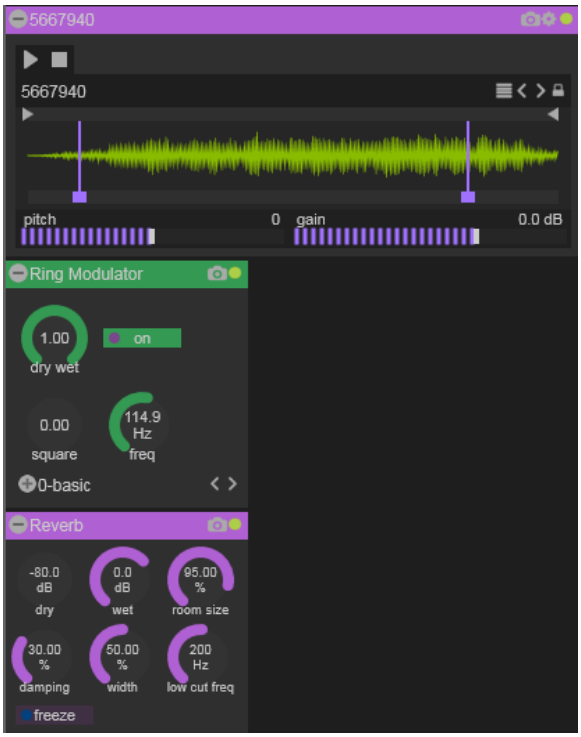


39. The Physics Engine

We will demonstrate the **physics engine**, by providing an exercise to create a self-evolving audio drone. Start with a sound from the *Various/Udrone folder* named *5667940.wav*. Choose the template named *Cross Fade loop sampler:*



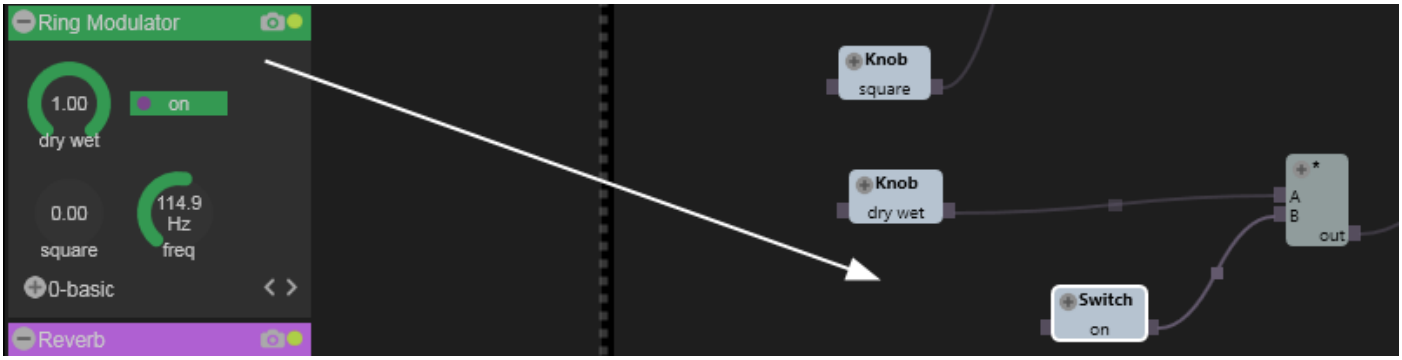




Add two FX **patches** below the sampler :

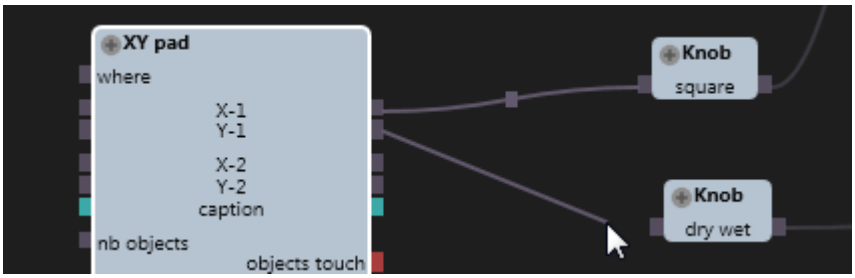
1. The ring modulator from the *Audio FX/Ring/* folder.
2. The reverb **patch** from the *Audio FX/Reverb/* folder.

Double-Click the ring modulator **patch** to open the **patch editor** window. Notice the two **knobs** *square* and *dry/wet*:

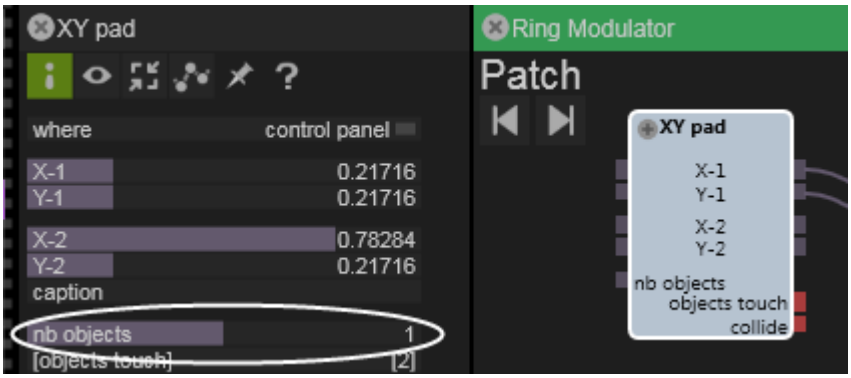


Add the **module** XY Pad from the *Modules/Interface design/* folder and select two objects in the pop up menu:

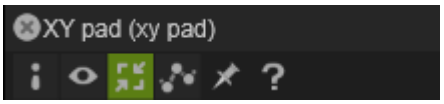
Now connect the X-1 and Y-1 **outlets** of the XY Pad to the two **knobs** *square* and *dry wet*



In the of the XY Pad **module** change the *nb object* (number of objects) to 1 because we will only need one ball for this **module.**



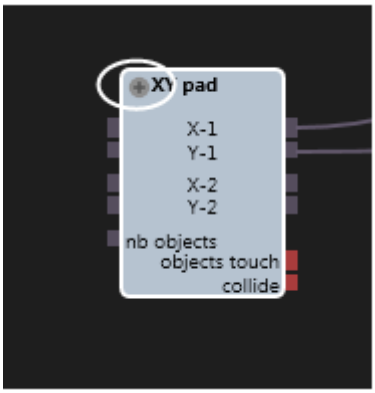
In this select the size tab and enable the **physics engine** option:



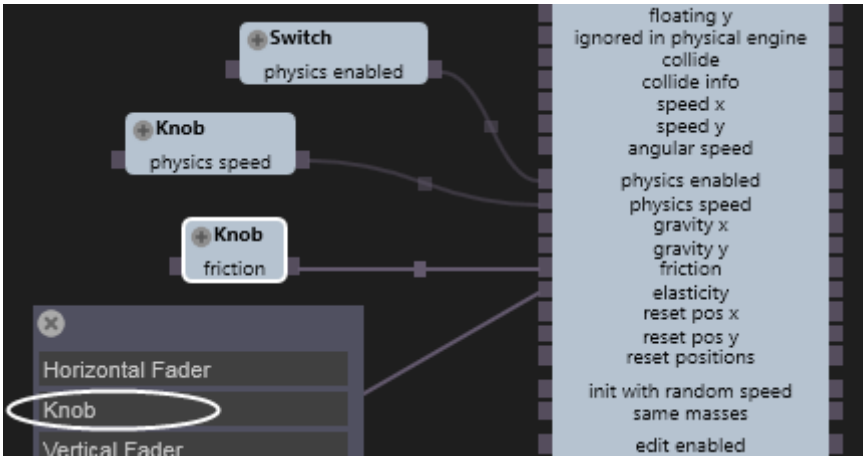
To have direct control of the physics options you can expand the XY pad **module** and look for the **inlets** corresponding to the **physics engine:**

Here we have selected:

1. **Physics enabled:** A **switch to** turn on/off the **physics engine.**
2. **Physics speed:** A **knob** to sets the physics speed for the elements.
3. **Friction:** A **knob** for the friction factor.
4. **Elasticity:** A **knob** for the elasticity factor**.**

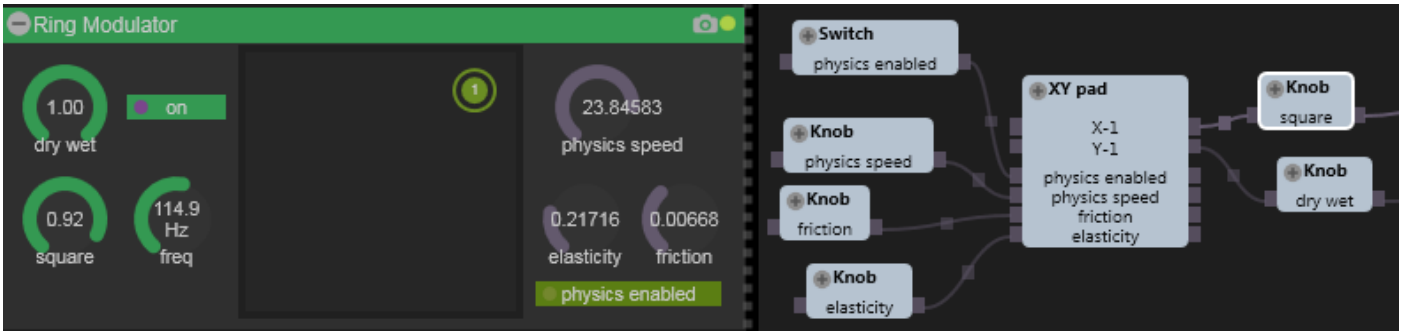


Click to expand the **module.**



Adding **knobs** and a **switch.**

Once activated the **physics engine** will provide movement to the two parameters of the *ring modulator* **patch.**



40. The Data Types in Usine

This section is by far the most complex section of this manual. Usine is a very intuitive program in which, you will not need to understand all of the concepts when you first begin. As you progress to becoming an expert with Hollyhock however, it will be necessary to understand the Data Types used within.

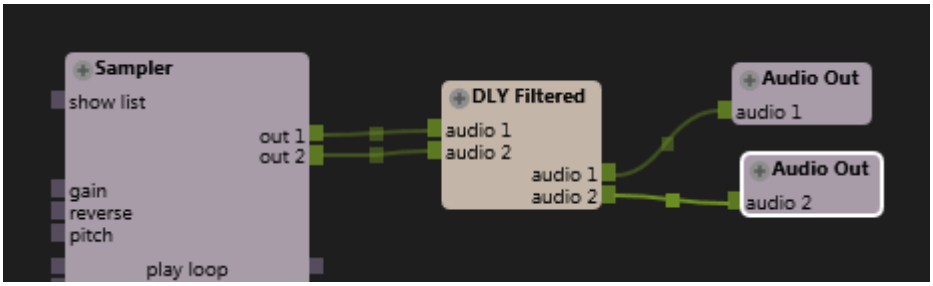
The most important thing with Usine is to understand that the input sound is sliced and processed into **blocks** of samples. The block size is set by default to 128, but can be changed in the **setup panel /**audio tab.

At a 44.1 kHz sample rate with a 128 sample block size (128÷44100), **patches** will be recalculated each at 2.9ms or at approximately 345 time per second!

There are five main flow types within Usine that are easily recognizable by their display color. Through the following sections you will be introduced to each of these Data Types and their usage.

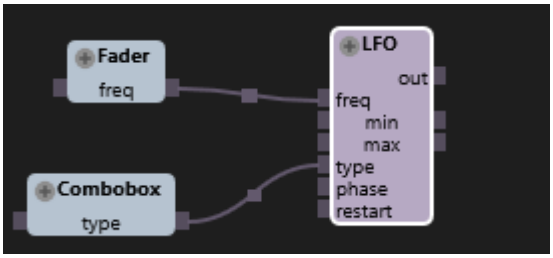
Audio

Yellow contains audio information as a block of samples at the defined sampling rate frequency. Typically audio flows are blocks of numbers from -1 to +1 which describe the audio wave. Generally audio levels are expressed in decibels (typically from -80db to +12Db).



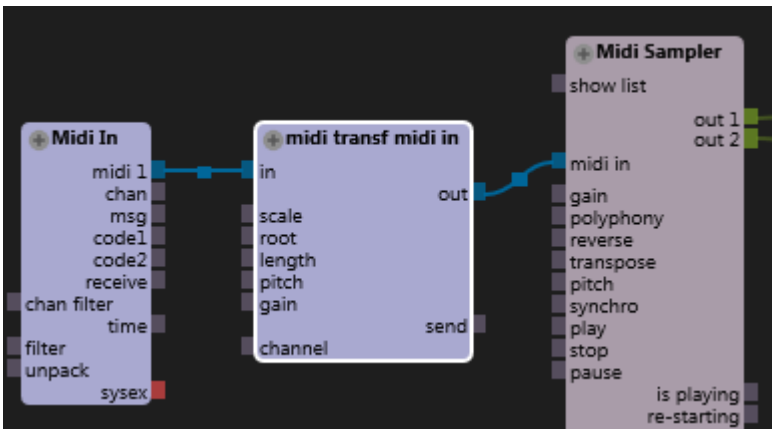
Data

Purple contains any sort of data information at various sample rates depending on the data itself. For example delay, feedback values, etc. These flows can handle any type of scaled numeric values.



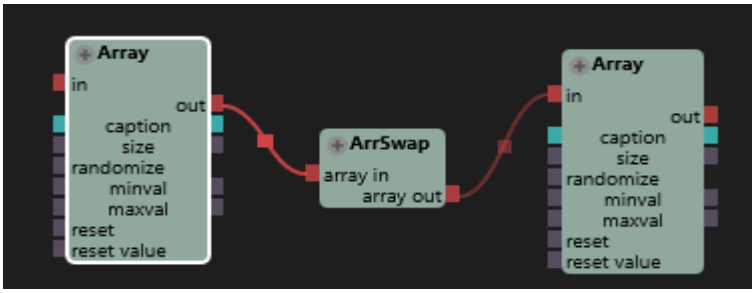
MIDI

Blue contains polyphonic MIDI message information (i.e. note, channel, velocity, etc).



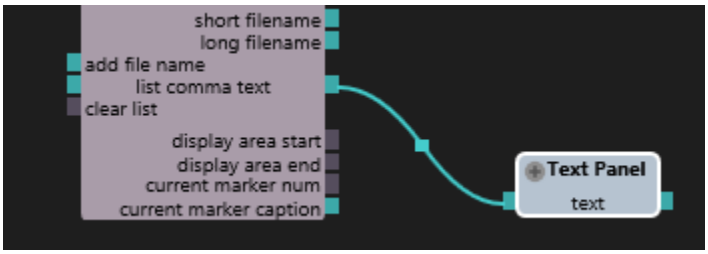
Array

Red contains a data array. An array is a set of data assembled together. (ex: 0,0,0,1,0,0,1,0). Arrays are present in step, matrix **modules**, and more.



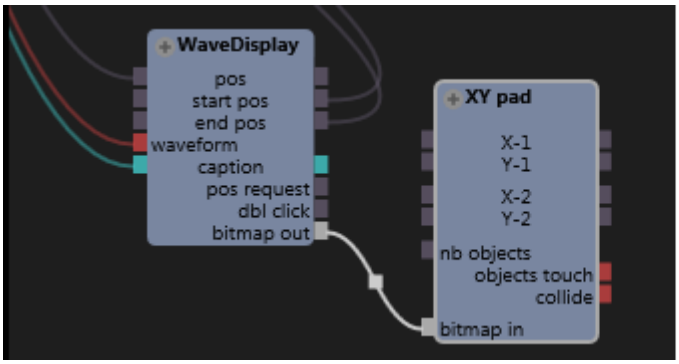
Text

Light blue contains text information. These can be expressed as a single text string, or as a comma separated text. This type is used in captions, lists, and so on.

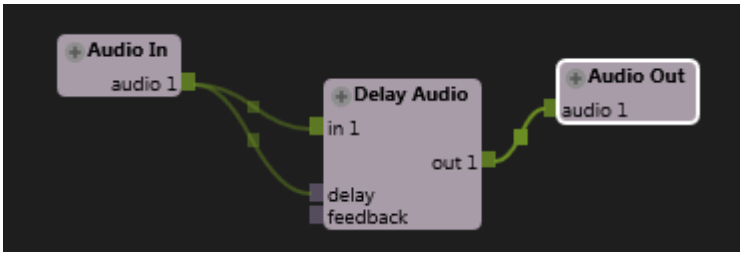


Bitmap

White contains bitmap and graphic information. Here you can see an example with a waveDisplay (from a sampler **module**) displayed in another **module**.

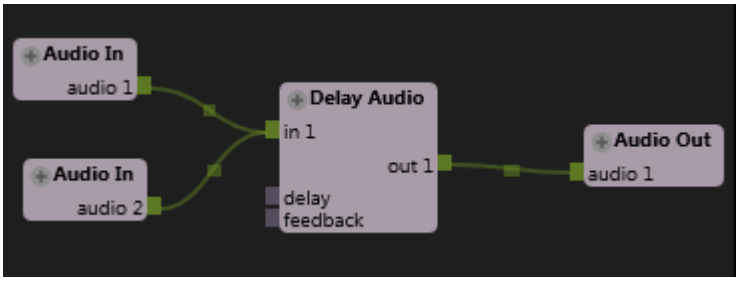


All flows are essentially compatible, and you can connect any kind of flow to any kind of input to make unusual and sometimes creative **patches**. Usine provides protection against unexpected data ranges, therefore the routing of different data types or scaled ranges can be done without concern. Below you can see an example of the internal protection provided by Usine:

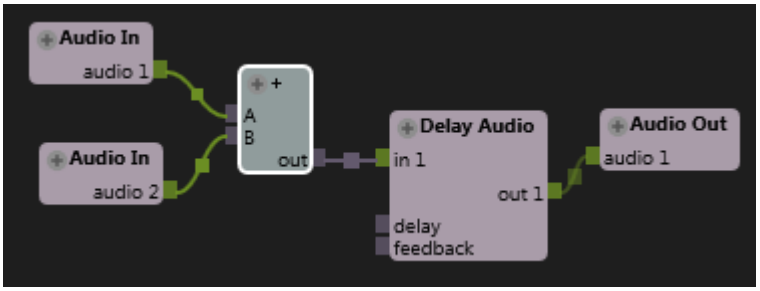


In this example the audio input modulates the delay parameter! The audio flow provides variance between -1 to 1. In this case the delay will vary from 0 to 1 and negative values are ignored.

Usine also allows multiple connections to a single inlet/outlet:



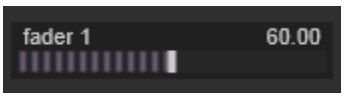
In this case Usine performs a simple addition of the input flow. The **patch** above is fully equivalent to utilizing the **+** math **module** as shown below:



Editing Values

There are several ways to modify the value of a control:

`[CTRL + CLICK]` Reset the control to the default value specified.

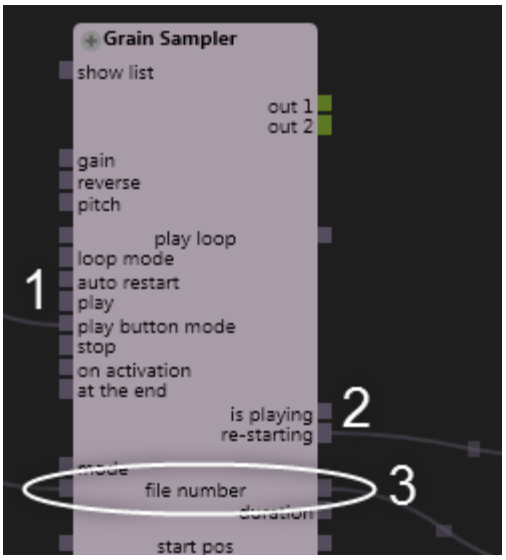


`[SHIFT + CLICK + MOVE]` Increases the mouse precision when modifying a value.

`[DOUBLE-CLICK]` Allows you edit the current value using the keyboard.

Flow Assignment of a Module

Module parameters have logical input/output flows indicated by the **inlet/outlet** position. The left side of a module is the **inlet,** while the right side is the **outlet**. Some parameters also contain both an input and output and as you will see below with the file number they are logically placed and directly across from one another.

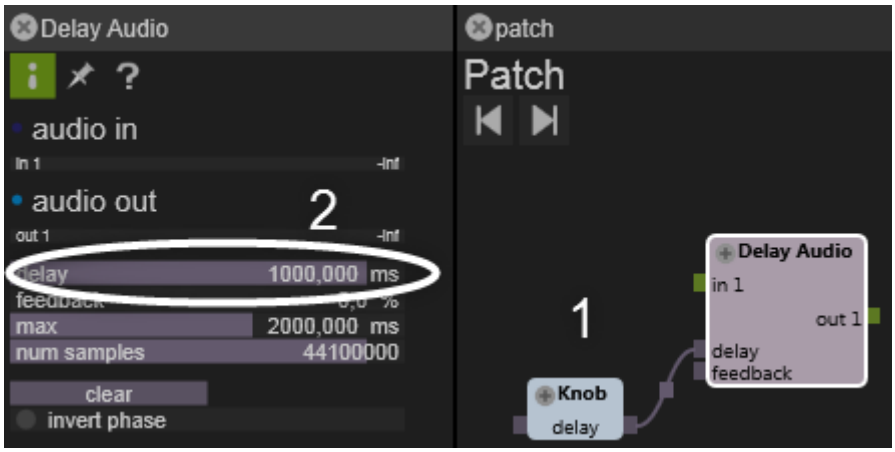


- 1 **Play button mode** is an input parameter.
- 2 **Re-starting** is an output parameter.
- 3 **File number** an input and output parameter.

Mapping and Dual Control

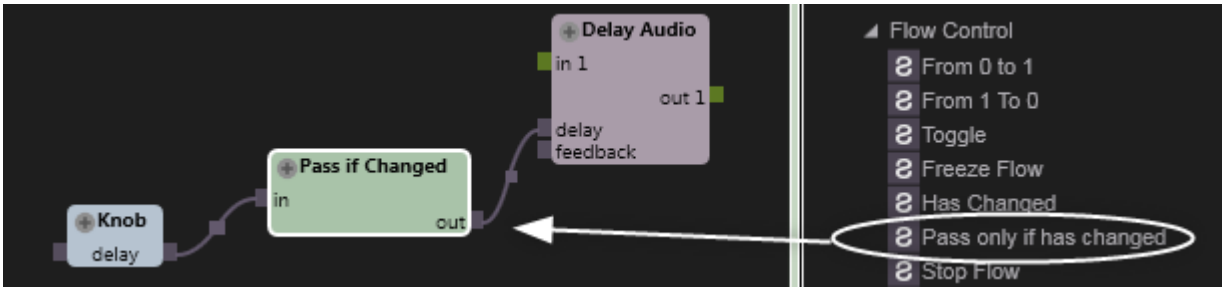
The correspondance between **patch** flow and parameters looks something similar as shown below:

Once an object such as a **knob** is wired to the input of a **module**, the **knob** becomes the master control and the controls will not override the value of the **knob**.



(1) Master **knob** control (2) control

To provide the ability to control the parameter of the **module** by both the control and the master **knob** control; a *pass only if has changed* **module** must be added. This will present a *-1* value on the input until the **knob** sends a different value, effectively allowing control from the as well.

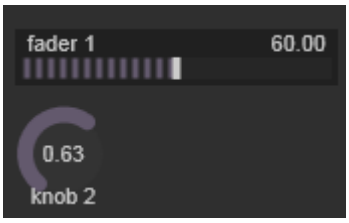


Data flows types

Data flows carry numeric values or arrays of numeric values. A flow passes through the wire each time the **patch** is recalculated at about 350 times per second. There is always something that passes through the wire even if the value has not changed.

Control Objects and numeric values

A **fader** and a **knob** are shown below. **Fader** and **knob** objects receive or send flows with a data range that can be determined by the displayed values.



This is a **switch** shown below. By default the switch provides a value of *0* for OFF and *1* if it is ON.

The controls below are the **List box**, **List Box Buttons**, and **Combo Box.**

Each of these controls provide a list of available choices. Each value or choice corresponds to a number that is essentially an index. As an example, the first parameter (A) has the numeric value *0*, the second (B) has a value of *1*, the third (C) the value *2* and so on. If nothing is selected the output value is *-1*.

In all list objects the index values are specified as sequential numbers starting from zero.

The **button** is shown below. The output of the **button** can be seen as a pulse transition from *0 to 1,* back to *0* when pressed, and remains at *0* until pressed again.

The **Led** functions the same as the **switch,** however provides a different graphical design.

41. Appendix

Menu icons and shortcut reference:

	Play /Stop audio Engine		Hides all opened menus and **patch** windows
	Alternate between the **workspace** and the **Start page**		Activates the MIDI/key learn mode
	Opens the **Browser** window		Activates automation record
	Displays the grid window		Locks /unlocks the design modules
	Displays the IB (Interface Builder) mode		Resets all the panels zoom (Double-Click)
	Displays the c**ontextual menu** commands		Zoom +/- the selected object
	Opens the **Settings panel**		Opens the **setup panel**
	Displays the **synthetic view**		Drag any device/**patch** or **rack** here to delete it

	Opens the **Devices panel**		Displays the **toolbox**
	Opens the **Trace panel**		Opens the **Mixer panel**
	Opens the **Playlist panel**		Opens the **Chat panel**
	Opens the **Direct to Disk panel**		

	Displays the properties tab		Displays the design tab
	Displays the remote tab		Displays the network tab
	Displays the help page		Displays the curves tab and the curves list tab (for **grid elements**)

42. Keyboard Shortcuts

General	
START USINE	[SPACE]
START GRID	[SHIFT + SPACE]
QUIT USINE	[CTRL/CMD+Q]
SAVE CURRENT WORKSPACE	[CTRL/CMD +S]
NEW WORKSPACE	[CTRL/CMD +N]
OPEN WORKSPACE	[CTRL/CMD +O]
RELOAD THE CURRENT WORKSPACE	[CTRL/CMD +R]
CREATE A NEW RACK	[CTRL/CMD +T]
LOCK_UNLOCK	[CTRL/CMD +L]
SHOW BROWSER	[CTRL /CMD +B]
SHOW GRID	[CTRL /CMD +G]
SHOW SETUP	[CTRL /CMD + U]
MIDI LEARN	[CTRL /CMD + M]
SHOW SYNTHETIC VIEW	[CTRL /CMD Y]
TOGGLE FULL SCREEN	[CTRL+F](win only)
EDIT REMOTE	[CTRL /CMD +M]
EDIT DESIGN	[CTRL /CMD + D]
EDIT SETTINGS	[CTRL /CMD +I]
NAVIGATE BETWEEN RACKS	[ARROW UP / ARROW DOWN]
MULTIPLE INPUTS/OUTPUTS CREATION	HOLD [SHIFT+CTRL]

Patch Commands	
PATCH OPEN	[CTRL /CMD ALT + O]
PATCH SAVE	[CTRL /CMD ALT + S]
PATCH SAVE AS	[SHIFT CTRL /CMD ALT + S]
PATCH CLEAR	[CTRL /CMD + DEL]
PATCH RELOAD	[CTRL /CMD + R]

Editing	
UNDO	[CTR /CMD + Z]
REDO	[SHIFT+CTRL /CMD + Z]
DELETE	[DEL]
CUT	[CTRL /CMD + X]
COPY	[CTRL /CMD + C]
PASTE	[CTRL /CMD + V]
SELECT_ALL	[CTRL /CMD + A]

Script	
COMPILE SCRIPT	[CTRL /CMD+F9]
COMPILE AND_INIT_SCRIPT	[CTRL /CMD + F10]